

Beyond the Catch

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The Northern World

North Europe and the Baltic c. 400–1700 A.D.
Peoples, Economies and Cultures

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VOLUME 41

Beyond the Catch

Fisheries of the North Atlantic,
the North Sea and the Baltic,
900–1850

Edited by

Louis Sicking and Darlene Abreu-Ferreira



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On the cover: Three fish pattern carved in a wooden net needle (fifteenth century) found at Walraversijde.

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INTRODUCTION

Louis Sicking and Darlene Abreu-Ferreira

The rising interest in the history of the fisheries may be linked with current concerns about the survival of the species and the fishing industry. Recent reports that the seas will be empty by 2050 if fishing continues at the present rate¹ is worrying, indeed, and reveals the possibility of the end of a phenomenon that may be considered as old as civilization. Our focus is on the pre-industrial period when the effects of fishing on fish stock could be considerable, but the consequences did not appear as devastating as today. This is not to say that developments that took place centuries ago are irrelevant for arriving at an understanding of current fish stocks and behaviour of the species. On the contrary, marine research institutes and stakeholders in the fisheries are involved in financing research on the history of the fisheries. This financial support is motivated not necessarily by a historic interest per se, but rather by the idea that the establishment of extensive databases on the fisheries and the fish stocks over a long period of time may be crucial to understanding present and future developments of the marine fauna and environment.²

Not only is there a growing interest among those involved in the commercialization of the fisheries for a comprehensive history of the fisheries, but the field has also attracted the attention of numerous scholars from a multitude of disciplines, many of whom use wide ranging methodologies to better study the multi-faceted elements of the history

¹ Worm *et al.* (2006) 787–790.

² The History of Marine Animal Populations (HMAP), headed by the Danish historian Poul Holm, is the historical component of the Census of Marine Life. CoML is a research network that considers as its mission to 'assess and explain the changing diversity, distribution, and abundance of marine species from the past to the present, and project future marine life.' HMAP is 'an interdisciplinary (history, ecology, paleoecology) research program that uses historical and environmental archives to examine the changes in marine communities over the past 500–1000 years. The goals of HMAP are to examine the ecological impacts of large-scale harvesting, long-term changes in stock abundance, and the role of marine resources in historical development'. <http://www.hmapcoml.org/> consulted at 4 April 2007. This approach has also given rise to scepticism. See for example Rahn Philips (2006).

of the fisheries. It is in the spirit of this growing multi-disciplinary interest in the field that this collection of essays presents new interpretations in the history of the fisheries by highlighting the consequences of the northern fisheries through an interdisciplinary approach, including the environment, economy, politics, and society in the medieval and early modern period.

The overwhelming interest in the history of the contemporary fisheries led us to limit the focus of this volume to the medieval and early modern periods.³ The thirteen essays included in this collection are more or less equally divided between the medieval and early modern periods, although it should be noted that some papers cross the 1500 caesura. Collectively, these papers cover a wide-ranging spectrum of the northern fisheries, including those of the North Atlantic, the North Sea, and the western Baltic. Cod (and other gadids) and herring are the main species dealt with in this book, but carp, tuna, sardine and several other marine and freshwater species make an appearance. We speak of European fisheries, but our aim has not been to cover all regions or countries involved in the European sea fisheries, although a considerable number of regions is presented, including Portugal (Inês Amorim), England (James Barrett/Alison Locker/Callum Roberts), Iceland (Sophia Perdikaris/Thomas McGovern), Denmark (Carsten Jahnke), Norway (Justyna Wubs-Mrozewicz), Newfoundland (Peter Pope) and the Low Countries (Louis Sicking/Adri van Vliet), including The Netherlands (Christiaan van Bochove, Petra van Dam, Bo Poulsen, Annette de Wit) and Belgium (Chloé Deligne, Dries Tys/Marnix Pieters).

As we wished to focus on the variety of approaches, methods, and source material with which to study the fisheries, we did not consider it a problem that, from a geographical point of view, the Low Countries are over represented. In fact, the abundance of source material available on the Dutch North Sea herring fisheries provided a long historiography on the subject.⁴ Recently several historians in the Netherlands have shown a renewed interest in this 'classic topic'. Young scholars, such as Christiaan van Bochove and Bo Poulsen, show that the integration of the available source material with new models and theories can result in

³ Scholarship on the modern fisheries tend to dominate academic conferences, such as those organized by the North Atlantic Fishery History Association (NAFHA).

⁴ For summaries in the English language: Unger (1978) and Unger (1980). More recently De Vries and Van der Woude (1995) chapter 7; Poulsen (2005).

important new conclusions and insights.⁵ The contributions on the Low Countries address a wide range of themes, including the profitability of the Dutch herring fisheries (Van Bochove), the cultural aspects of fish consumption (Van Dam), communication systems amongst fishermen at sea (Poulsen), the impact of war on the fisheries (Sicking/Van Vliet), and the consequences of the fisheries for fishwives (De Wit). The Low Countries are further represented by two papers from Belgium, one on a Flemish coastal village (Tys/Pieters), and one on fish farming ponds, their relation with urban dynamics, and the rise of the sea fisheries (Deligne). As the historic production in the Dutch language does not easily make its way into international historiography, this volume aims at delivering a contribution to the integration of the Low Countries in the international literature on the history of the fisheries.

The different papers are connected by the general idea of the 'fish event horizon', a concept introduced by James Barrett and also referred to by Sophia Perdikaris and Thomas McGovern. Although the contributors to this volume use a variety of models and methods, the collection consists of three sections corresponding with three major themes. The first section, 'Landscapes, Settlements and Spatial Organisation', focuses on the impact of the fisheries on the landscape, including the development of fishing communities, their decline and disappearance. Section two, 'Trade, Profitability and Taxation', deals with questions related to the economic consequences of the North Atlantic fisheries, including the role of towns and institutions in the development of the fisheries. The last section, 'Consumption, Communication and Cooperation', deals with the social consequences of the fisheries, including fish consumption and gender related developments. The aim of this introductory essay is to integrate the papers into the broad theme of long-term consequences of the northern fisheries. We will try to connect the various contributions, make comparisons and develop some perspectives for future research.

⁵ Van Bochove (2004) and Van Bochove and Van Zanden (2006); Poulsen (2005). See also Van Vliet (2003).

Methods and sources

With contributions from archaeologists and historians, the book aims to showcase the ways in which researchers can expand their findings through the use of a variety of sources and methodologies. Not surprisingly, both archaeologists and historians base the greater part of their arguments on the sources that they know best, but most of them include both written and archaeological data. Two of three archaeological papers deal with the early and high Middle Ages (Barrett *et al.* and Perdikaris/McGovern), and one with the early modern era (Pope). Zooarchaeology—the study of interactions between humans and animals through time by the analysis of animal remains and traces found at archaeological excavations⁶—forms the core of the two archaeological papers on early and high medieval England and Iceland. They show the wealth of information hidden in fish-bones and the great variety of methods used to derive this information from the seemingly worthless remains. Without going into further details of the techniques used—for this we refer to the papers themselves—it is clear, even to non-archaeologists, that fish-bone evidence has a great potential for enhancing our knowledge on the history of the fisheries and related fields of study, especially for the early and high Middle Ages, for which written evidence is non-existent or scarce.⁷ The third archaeological paper in this collection, by Peter Pope, includes the landscape as a source of knowledge, and provides a clear example of a balanced use of both written and archaeological source material. The latter is also the case with the paper by Dries Tys and Marnix Pieters, who were educated both in archaeology and history. This book will hopefully stimulate historians working on the fisheries and related topics to integrate the results of archaeological research into their own work.

The historians, all making use of a great variety of written sources, are confronted with different challenges when it comes to the analysis of their material. Whereas the medievalists try to derive as much information as possible from relatively few remaining texts (Jahnke, Wubs), the early modernists, taking advantage of the availability of more abundant written material, summarize their data in tables (Amorim), develop

⁶ Ervynck (1999) 123.

⁷ On the possibilities and limitations of zooarchaeology see for example Ervynck (1999).

economic models in the case of an abundance of quantitative data (Van Bochove), borrow theories from economists and biologists (Poulsen) or opt for a selective comparative approach (De Wit).

In spite of all the variety of sources used and methods and models applied, all papers presented in this volume have an important common feature that justifies, in our opinion, the ambitious title of the book: that is, all essays have a long-term approach by taking at least one, but mostly two or more centuries into account. As several papers cross between the Middle Ages and the early modern era (Van Dam, Deligne, Sicking/Van Vliet, Tys/Pieters), it is possible to establish several comparisons and relations between elements of the pre-industrial European fisheries of the North Atlantic, North Sea, and western Baltic. Looking beyond the catch, we find expanding horizons, with the fish at the centre of interest, as the example of the zooarchaeologist suggests, without losing sight of the fishermen and their wives.

Expanding fish horizons

In the first contribution to this volume, James Barrett introduces the term 'fish event horizon' to indicate a marked increase in marine fishing, as shown by the presence and dominance of marine fish-bones at inland locations, as compared to freshwater fish-bones. Within the context of the present volume we propose to use the term 'expanding fish horizon' to indicate the increased distance between the location where the fish was caught and where it was eventually consumed. This expansion is twofold. Firstly, the distance overland rose, from the location where the fish was brought onshore to where it was consumed. Barrett *et al.* and Perdikaris/McGovern focus their respective essays on this theme. Secondly, the distance at sea also increased as marine fishermen, initially coastal fishermen, extended their activities further away from the coast. Flemish and later Dutch fishermen in the late Middle Ages, for instance, extended their fisheries from the Flemish and Dutch coasts to the English, Scottish, and Shetland coasts and to the Doggersbank in the open North Sea. Indeed, from the sixteenth century onwards, European fishermen went as far as Newfoundland to catch cod, as Peter Pope illustrates in his contribution. The fish was processed in the New World, but most of it was intended for consumption back in Europe. In fact, the evidence presented in a number of papers in this collection

suggests that the expansion of the marine fish horizon on land preceded the one at sea.

Iceland presents the earliest archaeological evidence for the expanding fish horizon on land. This phenomenon began when the Icelandic highlands were settled, and Nordic farmers settling inland thought it vital to provision their households with dried marine fish. Perdikaris and McGovern convincingly suggest that the early appearance of a fish horizon in Iceland was part of 'the very early Viking age subsistence package.' The fish horizon in Iceland was thus not the result of increasing population and developing market exchange late in the settlement age, but preceded it. The question about how the fish was distributed from the coast to the interior of Iceland remains to be answered. The Icelandic archaeologist Ragnar Edvardsson argued that substantial inter-regional movement of fish took place from the West Fjords to the interior of Iceland during the Viking age.⁸ Since it is known that elites in northern Norway were active in the movement of stockfish by ship, Perdikaris and McGovern suppose that a distribution system, in which the chieftains of the early settlement period were involved, was responsible for the transportation of substantial volumes of fish from the coast to interior Icelandic regions. (Perdikaris/McGovern figure 2).

In Scandinavia, especially in Norway and on the islands of the western Baltic, marine fish was already of considerable importance in the centuries before 1000, probably because of a combination of easy access to salt water fish and a more limited availability of other food resources than elsewhere in Western Europe. In this perspective the origin of marine fish consumption in inland Iceland in the tenth century, near the Mývatn lake region where freshwater fish was easily available, may be seen as an extension of a phenomenon originating from continental Scandinavia.

Fish-bone evidence from England shows that freshwater and migratory species (cyprinids or fishes of the carp family and eels) dominated practically all fish caught from the seventh to the tenth centuries, whereas most 'catches' of the eleventh century and later had far more marine fish: herring and cod-like fishes or 'gadids'. According to Barrett, the archaeological evidence shows that the increase in English marine fishing within a few decades around the end of the first millenium was so marked and rapid that it was probably revolutionary. He also notes

⁸ Edvardsson (2005).

that zooarchaeological research elsewhere in Europe shows an increased importance of herring and gadids around or after the end of the first millennium. Carsten Jahnke, dealing with the herring fishery in the western Baltic, dates the origin of the presence of herring and cod on the European market as far back as the ninth century.

Not surprisingly, there was some regional variation regarding the moment in which these species were introduced inland. Archaeological evidence at Menzlin, inland Germany, shows that herring appeared in the region in the ninth or tenth century; remains of gutted herring from the tenth century were found at Wrocław in inland Poland; in inland Belgium, the rise of gadids and herring has been dated between the mid tenth to the late twelfth century; and the increase of marine fish at inland sites in northern France has been dated to the thirteenth century. Future research may reveal the extent of these variations and whether the shift to marine fish consumption was as rapid elsewhere in Europe as it was in England (Barrett *et al.*). The present state of zooarchaeological evidence supports the hypothesis that the marine fish horizon expanded on land, first from Scandinavia to the interior of Iceland, then to the interior of Germany and Poland, into the British isles and the Low Countries, and finally into northern France. Future research however may make it necessary to alter this hypothesis. One might expect for instance earlier evidence of marine fish-bones in more densely populated areas of the Rhine and Meuse rivers in the west, than in the areas of the Weichsel and Elbe rivers in the east, which were less populated.

The expanding fish horizon at sea was the result of two major shifts: the shift from inland to coastal fishery, and the shift from coastal to deep-sea fishery. This is not to say that the coastal fisheries replaced the inland fisheries entirely. Rather, the shifts evolved over time, gradually, with extensions and transitions within the existing fisheries. For example, the herring fishery from Scania, the south-western coastal area of Sweden which belonged to the kingdom of Denmark at the time, was clearly a coastal fishery, originally carried out as a secondary activity with *schuten*, or small open boats, by coastal dwellers who combined fishing with farming. It remained a coastal fishery until its decline at the end of the fifteenth century.

Whereas the Scania herring fishery remained a coastal activity, the fisheries of the east coast of England, near Scarborough and Great Yarmouth, developed into the deep-sea herring fishery of the North Sea. Medieval Flemish fishermen, for instance, who originally fished along the Flemish coast, extended their fishing territory to the east English

coast by crossing the English Channel. They were joined, at least by 1295, by fishermen from Zeeland and Holland along the English and Scottish east coast near the Shetlands, and at the Doggersbank. Initially their catch was probably processed and sold on the English coast, but eventually processing took place on board and the catch was brought to the Low Countries to be repackaged and sold. The introduction of the herring buss in the fifteenth century,⁹ with a flat deck, facilitated the processing of herring on board. Because of its rounded hull, this seagoing vessel was fit not only to stay at sea in difficult weather but also to stock a large volume of herring tuns in the hold of the ship. Processing on board, that is gutting, salting, and putting the salted herring in tuns, increased the production of salted herring and extended the area where the fish could be caught and sold.

The rise of the deep-sea fisheries did not mean the end of the coastal fisheries, as the case of Walraversijde indicates, a Flemish coastal village on the southern North Sea (Tys/Pieters). The archaeological evidence suggests that fishermen from Walraversijde did not participate in the Flemish herring fishery along the English coast prior to the fifteenth century. The fish remains found at the village contain a great variety of species (but mainly herring, cod, flatfish and eel). According to Tys and Pieters, the fishermen from Walraversijde fished primarily in the southern North Sea.¹⁰ The presence of barrels at Walraversijde, of which the wood (oak) originated from the vicinity of Gdansk and dated from between 1380 and 1430, indicates that until then processed herring was imported from Scania.

This provides further evidence of the absence of Walraversijde in the North Sea herring fisheries before processed Scania herring, imported in the Low Countries, was superseded by locally processed and salted North Sea herring in the fifteenth century. The involvement of Walraversijde in meetings with other Flemish villages, towns and other authorities around the middle of the fifteenth century, concerning the salting of herring, is a clear indication that by then the village was involved in the North Sea herring fishery. As Walraversijde did not have a deep-sea harbour, fishermen from this village that were involved in the North Sea herring fisheries must have brought their catch directly to the more

⁹ The name 'buza' or 'buis' is much older, but it was only in the fifteenth century that the name 'buis' became related, albeit not exclusively, to fishing. Van Beylen (1976).

¹⁰ See also Charles Knightly *et al.* (2000) 39, 41.

important fishing towns like Ostend or Nieuwpoort without leaving archaeological traces in Walraversijde itself. Keel built ships like the herring buss could not land on the beach. This explains why the North Sea herring fisheries became concentrated in those coastal towns that had a deep-sea harbour.

In addition to searching for rich fishing grounds, voyages of exploration also played their part in the extension of the fish horizon at sea. The Vikings, for instance, pushed ahead, fishing in order to survive on their explorations from Norway to Iceland, Greenland, and North America, which they reached around 1000. As Mark Kurlansky aptly observed, 'it is not a coincidence that this is the exact range of the Atlantic cod'.¹¹ About five hundred years later John Cabot crossed the Atlantic from Bristol in search of an eastern route to Asia, but found instead land surrounded by waters teeming with cod. Indeed, many excellent fishing grounds lay near the coasts of Newfoundland. It was impossible to process dry salt cod on board, so the proximity of coastal stations with space for drying fish was an important precondition for enabling fishermen to bridge the enormous distance back to southern Europe, which would have been impossible with fresh fish.¹² Peter Pope explains how those who had to come the farthest to reach Newfoundland found themselves fishing for cod off the most distant coasts. Thus, West Country fishermen managed to replace their Portuguese, Basque, Breton, and Norman counterparts on the eastern Avalon at the end of the sixteenth century, partly because they arrived ahead of their competitors.

The archaeological evidence presented in this volume emphasises the expanding fish horizon on land from the tenth or eleventh century onwards. Initially, marine fish was caught mainly along the coast. Those coasts could be very close to where the fish was sold, such as the Scania herring fishery, but the coastline could also be far from the fishermen's home ports. Fishermen from the Low Countries fishing along the English east coast from the thirteenth century onwards, and English, Basque, Portuguese, and French fishermen near the coast of Newfoundland from the sixteenth century onwards, were responsible

¹¹ Kurlansky (1998) 19. See also Seaver (2000) 29–44, 37.

¹² Markets in northern Europe could be supplied with wet or green cured fish, which was processed by ships fishing on the Grand Banks, from about 1550. At the end of the seventeenth century the green or wet banks fishery represented about one fifth of total cod production from Newfoundland waters. See on scale Pope (2006).

for the expanding horizon across the North Sea and the North Atlantic, respectively, as they brought their catches back to their home ports.

An important distinction must be made between the expanding fish horizon on land and the one at sea. The one on land involved the appearance of new species at north-western European markets in the high Middle Ages. The expansion of the fish horizon at sea did not lead to the appearance of new species but to the *massive* import of processed marine fish, enabling cod and herring to dominate European fish markets in the late medieval and early modern periods. Highly urbanised Belgium provides the best example of this hypothesis. Marine fish-bones were already found in inland Belgium from the eleventh century onwards, but the *massive* import of herring in inland Belgium is a phenomenon of the late Middle Ages. The introduction of the herring buss resulted in wider catching areas and more efficient processing on board, leading to a greater supply of herring in the Low Countries than the previous imports from the Scania herring markets had been able to provide.

Chloé Deligne's paper indirectly supports this reasoning. In her study of fish-farming ponds in Brabant and Hainaut, she relates the decline of fish farmers and fishponds near the end of the Middle Ages to the massive rise of salted herring in the inland urban markets. Archaeological evidence from the city of Namur in the inland county of the same name, situated south of Brabant and east of Hainaut, shows that until the fifteenth century freshwater fish represented more than 90% of the excavated fish remains. From the fifteenth century onward, the remains of marine fish, especially salted herring but some salted cod as well, greatly outnumbered the remains of fresh water fish.

The possible relation between the rise of the herring fisheries and the decline of fish-farming cannot be generalised, however. Barrett argues that in the British Isles the growth of the cod fisheries in the high Middle Ages corresponded with attempts to expand the supplies of freshwater fish, including the introduction of fishponds. A possible explanation for this difference may be the rise of the population in the high Middle Ages compared to the decline of the population after the Black Death. The *sudden* appearance of new species inland (e.g. England around the year 1000) as well as the efforts to extend fish-farming may be connected with the growth of the population from the eleventh century onwards. It was only when the decimated population started to grow again in the late Middle Ages that the demand for fish rose again. The rise in buying power as a consequence of the Black Death may have created a differentiation of taste. The rising interest in

carp, a prestigious fish, near the end of the fourteenth century and at the start of the fifteenth century observed by Deligne may perhaps be seen in this perspective. This interest seems to have been temporary as fishponds started to decline from around 1420. One of the causes for this decline may have been the *massive* influx of marine species that came to dominate the inland markets (e.g. Namur), although several other factors will have to be taken into account, for which we refer to Deligne's paper. Future research will be necessary to enhance our understanding of the development of the fishponds and the rise of the sea fisheries and their possible connections.

Processing methods

Because fish spoils rapidly, prompt processing is crucial in order to maintain seafood quality. Extending the storage life of fish was a precondition for its transport over longer distances, that is, for extending the fish horizon and for fish to become a marketable product. Cod and herring were the main marine species to be processed in medieval and early modern Europe. As discussed in several chapters in this book, there were two main fish processing methods in operation in pre-industrial Europe. One, fish from the cod family could be dried vertically to become stockfish. It could then be kept for five to seven years, retaining its nutritional value during the first three years. If it was cured and dried horizontally it became klipfish. Two, there was the combined dried and salted form used in Newfoundland, where cod was split, washed, salted, and then spread out to dry. As for herring, it could be gutted and salted wet in barrels, remaining edible for up to two years.

People in Scandinavia were already aware of and involved in this process in pre-historic times. For this reason, Perdikaris and McGovern devote much attention in their essay to the processing of fish, a development they trace, on the basis of archaeological evidence, to the early and pre-Viking Iron Age on the Lofoten and Vesterålen islands in arctic Norway. This is where conditions for the production of stockfish were ideal, where temperatures fluctuated around 0° Celcius for months at a time, and where strong winds stimulated the freeze-drying process.

Air-dried cured fish could be stored for years without salt or refrigeration, and thus provided a light, portable, and highly nutritious source of protein. It was the perfect food to provision boat crews, explorers who sailed for long periods of time, and farming households that were unable

to live from their land alone. Moreover, it was an excellent product for commercialization. Cod, the main species for stockfish production in its dried form, is one of the major keys to understanding the expansion of the Vikings across the Atlantic.¹³

Perdikaris and McGovern observe that from the moment the highlands of Iceland were settled, Nordic farmers thought it vital to provision their households with dried fish from the distant sea. Of all skeletal evidence of marine fish found at Mývatn, dating from the ninth century down to the thirteenth century, not one whole marine fish skeleton was present. This clearly indicates that marine fish reached the area in processed form only. By contrast, the freshwater fish from the Mývatn area, such as trout and charr, are represented by practically all the bones of the complete skeleton. Their study reveals also that skeletal element analysis enables the researcher to distinguish both production and consumer sites, and to determine the type of processing the fish underwent. In Iceland, for instance, stockfish as well as klipfisk from cod and haddock were produced.

It seems no coincidence that the arrival of the Scandinavians in Northern Scotland, the Orkneys and the Hebrides in the eleventh century coincides with the intensification of marine fishing in these regions. A transfer of the technology to process fish must have taken place from the Scandinavian world to the British Isles, which enabled the fish horizon to expand into inland Scotland and England.

A comparable transfer of technology may have taken place from Scania to the Low Countries during the late Middle Ages. The introduction of gutting herring in the Low Countries around 1400 has been traditionally attributed to Willem Beukelszoon from Flanders. His supposed invention has given rise to a whole 'memorial culture' dating back to the fifteenth century. As archaeological evidence proves that herring was already processed centuries earlier in the Scania area,¹⁴ and given the fact that people from the Low Countries were already involved in fishing and trading Scania herring in the thirteenth century, it is conceivable that the technology of processing herring was introduced to the Low Countries by Netherlanders involved in the Scania fishery.¹⁵ Although Willem Beukels and his invention have been dismissed as 'a

¹³ Kurlansky (1998) 21.

¹⁴ Bødker Enghof (1996).

¹⁵ Sicking (2007) 349.

false legend,¹⁶ the importance attributed to it may well be a representation of how much the invention was valued by contemporaries who witnessed the enormous changes to which the *massive* production of gutted herring gave rise in the Low Countries in the late Middle Ages. Instead of importing Scania herring, the Low Countries now became an important centre of export of processed North Sea herring that gained a monopoly on the Western European market in the sixteenth and seventeenth centuries.¹⁷

Justyna Wubs looks at one other, less known, innovation in the processing of fish that had significant consequences for the marketability of fish, especially Icelandic cod. The process in question consisted of hammering or stamping the stockfish with a special kind of mill, a technique introduced in the beginning of the sixteenth century in southern Germany where the consumption of stockfish was very popular. The mill softened the hard Icelandic stockfish, and the results were so successful that consumers in southern Germany, who previously preferred stockfish from Bergen, now preferred the new soft Icelandic stockfish product.

Landscape, settlements, and spatial organization

The herring fisheries along the coasts of the western Baltic and the North Sea, and the cod fisheries in the North Atlantic gave rise to the development of temporary and in some cases permanent settlements. Jahnke describes how each autumn many farmers, and others, left their homes in Denmark, and in coastal areas of the Baltic and North Sea, to join at the beaches of Scania to catch herring as a secondary activity. Temporary huts were built on the beach to serve as shelters. These huts developed into fishing camps or small settlements that the Danes later called *fiskelejer*. Here boats were equipped and nets and other equipment were repaired.

At Scania, especially in the Skanør peninsula, but also on the island of Rügen in northern Germany, *Vitten*, that is, temporarily occupied settlements, were erected in the first half of the thirteenth century. Here the fish were processed in special huts (*styrterom*), auctioned and sold

¹⁶ Unger (1978).

¹⁷ De Vries and Van der Woude (1995) 297.

to merchants who stayed in these *Vitten* in their own huts or *Buden*. These meeting places for fishermen and merchants near the Sound in Skanör, Falsterbo, Malmö, Dragør and others, evolved into international herring markets known as the fairs of Scania.

Each autumn merchants from the Baltic and North Sea, including Scandinavia, northern Germany, England, the Low Countries, Rhineland, and Westphalia came to Scania and grouped together in *Vitten* according to their town of origin, with privileges they received from the Danish king. Following their own jurisdiction and administration traditions, these *Vitten* developed into 'proto-urban colonies of foreign trading powers on Danish territory'¹⁸ in the fourteenth century when Danish royal power was in decline. The *Vitten* became pseudo micro-towns with all the features one would expect to find in urban centres, such as streets, shops, churches, and inns. Representatives from towns of the Hanseatic League, such as Lübeck, Gdansk, Rostock, Hamburg, and Bremen, as well as from the Low Countries, such as Brielle, Kampen, Elburg, Harderwijk, Leiden, Maastricht, and Zierikzee, had their own *Vitte*. Whereas some of the locations where herring was landed and sold remained temporary marketplaces during the entire Middle Ages, others, such as Malmö, Trelleborg, Simrishamn, and Copenhagen, developed into cities. Those places that developed into cities lost their grasp on the catch and trade of herring that remained located in temporary settlements.

The number of boats involved in the Scania herring fishery has been estimated at about 10,000 near the end of the fourteenth century when the Scania fairs reached their zenith. Consequently, the great number of people involved in fishing, trading, and related activities in the region had a tremendous impact on the development of settlements, urbanization, and on the landscape as a whole. Lübeck's development, for instance, surged from the thirteenth century onwards as a result of the Scania fairs, since Lübeck's entire merchant elite and fleet were involved in the trade of herring and salt.

The impact of the fisheries on the development of settlements is exemplified by the case study of an individual settlement along the Flemish coast: Walraversijde. As was the case with the fishermen in the western Baltic, those from Walraversijde were originally farmers who fished for

¹⁸ Jahnke in this volume.

additional income. Tys and Pieters suggest that Walraversijde developed from a temporary fishing settlement in the thirteenth century into a permanently inhabited village in the fourteenth. There is a parallel to be drawn with the fishing farmers in the western Baltic, giving rise to the development of the *fiskelejer* and *Vitten*.

Walraversijde also provides an interesting example of the dynamics of the coastal landscape. The Saint-Vincentius flood of 1394 had a dramatic effect on the village, which found itself on the beach. Whereas similar floods in England earlier in the fourteenth century caused several fishing villages to wholly or partially disappear, Walraversijde was rebuilt further inland, behind the dunes. The construction of the new village seems to have been well organized as most of the houses were put in parallel rows. The construction of a dike within five years after the disastrous flood is another important infrastructural feature of the new village.

Tys and Pieters link this remarkable revival of the village to the phenomena of *Hofwüstung* and nucleation. *Hofwüstung* is the abandonment of farmsteads and concentration of land in the hands of a few major landowners. They suggest that Walraversijde may have survived thanks to those people from the abandoned farms who, if they did not become land labourers on the larger farms in the coastal area, may have joined the fishing fleet of the coastal village. Fishing may then have become their main or only source of income. The process of nucleation resulted in a reduced number of towns and villages in the Flemish coastal area in the late Middle Ages as compared to the number of settlements in the twelfth and thirteenth centuries. This process of concentration and related specialization in the fisheries is reflected in the spatial organisation of Walraversijde. The occupation density is much higher than in non-fishing rural settlements. The fact that no room was left for stables and gardens around the houses confirms the character of a village mainly occupied with fishing.

Peter Pope's essay also examines locations where fish was brought ashore for processing. From a Eurocentric geographical perspective, Pope looks at the most distant settlements originating from fishing by European fishermen, presenting the only contribution with 'landscape' in the title, and in which he asks two basic questions: who fished where, and when? He attempts to answer these questions by reconstructing the shifts of ethnic patterns in the transatlantic fisheries, and by analyzing how the economic culture of that vernacular industry affected the

'maritime cultural landscape' of North America in the early modern period. Pope relies on the term 'maritime cultural landscape', introduced by the Danish marine archaeologist Christer Westerdahl, in order to 'emphasize the penetration and interdependence of land and sea in coastal zones.' Pope considers the idea of landscape as an evolving web of landmarks—places where human interactions and activities occur—and people.

In the North American coastal landscape involved in the early modern transatlantic fishery, the *fishing room* represented a landmark that has been considered the fundamental geographical unit in the industry. A fishing room was a shore establishment necessary for splitting, washing, salting, and drying cod. It consisted of a fishing stage: a rough wooden wharf with an enclosure against the weather at its seaward end. Drying space was the most important requirement for a productive fishing room. A variety of possibilities existed: in the sixteenth century Bretons, Basques, and Portuguese used cobble beaches, sometimes improved with a layer of fire boughs. West Country fishermen on the English shore in the seventeenth and eighteenth centuries dried their cod on flakes, rough wooden platforms covered with boughs. Around 1650, Bretons and Basques followed this example in order to expand their drying capacity.

The distribution of the fishing rooms according to the principle of 'first come, first served' meant that those who had the shortest distance to cross over the North Atlantic, the West Country and Irish fishermen, were able to build their fishing rooms nearest to Europe, that is on the Avalon Peninsula. The Bretons had fishing rooms on the Petit Nord, the Basques in the Gulf of Saint Lawrence. Compared to the number of fishermen involved in the Newfoundland fisheries—15,000–18,000 in the late seventeenth century—there were relatively few fishing rooms, about one hundred. Because of this concentration, and because a fishing shallop could sail or row about ten kilometers a day and had to return every day, the impact of these European migratory fishermen on Newfoundland was limited.

This concentration had two consequences. First, it tended to minimize conflicts with the Amerindian aboriginals who did not depend on cod and adopted a strategy of avoidance during the fishing season, when they were by far outnumbered by the Europeans, and of scavenging when the fishing rooms were abandoned at the end of the fishing season. Second, strong competition existed among fishermen for fishing rooms. This was due to the fact that only a limited number of places on

Newfoundland's coast provided suitable conditions for fishing rooms. Most of the coast is steep, rocky, or too far removed from the fishing grounds such as the west coast of the island. Pope considers the access to fishing rooms to have been a more serious challenge than finding the necessary labour force. This is striking given that generally in the historiography of North America, land is assumed to have been plentiful and labour scarce. The opposite was the case in Newfoundland, where useful land for processing cod was not plentiful, but where labour was available thanks to the important numbers of migratory fishermen coming directly from Europe.

The competition for fishing rooms resulted in two strategies that stimulated permanent settlement. On the one hand, competition for preferred shore spaces was a strong incentive for ethnic clustering. Far away from home, it was most secure and comfortable to work among fellow countrymen. On the other hand, over-wintering caretakers were appointed to secure the same fishing room for the next season. These caretakers became settlers in informal settlements on the English Shore in the seventeenth century, and on the Petit Nord in the later eighteenth and early nineteenth centuries. Thus, concentration of the European cod fishermen in fishing rooms, the tendency to return to the same fishing room or one nearby, combined with ethnic clustering and the appointment of caretakers, determined where the fishermen of various European regions would catch and process their cod.

The close proximity between the *fiskelejer* and the *Vitten* in the western Baltic area (Jahnke) contrasts with the enormous distance between the fishing rooms on the coast of Newfoundland and the European markets where the processed cod was sold (Pope). They had nevertheless some similar features: they were seasonal settlements on the coast close to the fishing grounds, and both the *fiskelejer* and the fishing rooms had a limited infrastructure, separate from the location where the fish was auctioned or sold. Ethnic clustering took place in both areas, on a local level in the western Baltic, and on a regional level in Newfoundland.

The rise of the marine fisheries not only had important consequences for the development of settlements and the coastal landscapes of the western Baltic, the North Sea, and Atlantic Canada, but in the case of the herring fisheries they indirectly affected what Chloé Deligne has called 'the bygone peri-urban landscapes' where the fish farmers' fishponds had been concentrated. In Deligne's regions of study, Brabant and Hainaut, as well as in various other parts of Europe, fishponds declined

and even started to disappear in the late Middle Ages. For example, the massive influx of herring from the first decades of the fifteenth century onwards was one of the factors responsible for the decline of fish farming in what is now Belgium. The outlying fishponds disappeared first, followed by those in the vicinity of smaller urban centres. The fish farms that survived the longest were all large, comprised of several fishponds, and were located closest to important urban centres.

Trade, profitability and taxation

The distinction between producer sites and consumer sites of marine fish is a useful paradigm for understanding the development of medieval trade in marine fish, although trade may not have been the only possible way of bridging the distance between production and consumption areas. Traders followed the fishermen to those places on the shore where the fish was processed, in the case of the herring fishery of the western Baltic; where the processed fish was brought on land after having been processed at sea, in the case of the North Sea herring fishery; at sea, in the case of the *ventjagers*, boats who joined the herring busses at sea to buy the catch and which returned home before the herring busses; or on a distant shore, in the case of the Newfoundland cod fishery. Unfortunately, the contributions to this volume do not contain much information on how the fish was transported inland. The only exception is found in the work of Inês Amorim who mentions that mule drivers in Portugal took the sardine catch from the coast inland. Generally it was cheaper to transport bulk products over water, as in the Netherlands, where processed marine fish was transported in barrels through the riverine trade.¹⁹

Most contributors to this volume include trade in their respective studies. James Barrett, for instance, concludes from fish-bone evidence that cod and herring were already widely traded in the eleventh century, a century earlier than the written sources document. The commercialization of cod must have started in northern Norway and may have preceded the year 1000, as in the case of Iceland, although it may be more prudent to speak of redistribution rather than commerce in the latter case. Until the Black Death in the middle of the fourteenth

¹⁹ Weststrate (2008).

century, Vágur on the Lofoten had been a central market for the cod fish trade in northern Norway. According to historical record, this trade was founded by king Øystein (1103–1117), which does not exclude the possibility of an earlier stockfish trade in the area.

After the middle of the fourteenth century the cod fish trade was centralized in Bergen,²⁰ to which Justyna Wubs devotes her contribution. Focussing on the later Middle Ages, she shows how the staple market for stockfish of Bergen was affected by competition from new trade centres and technological changes. Hanseatic and local Norwegian traders had been joined by traders from several regions in northern and north-western Europe. In the fifteenth century, Bergen's role as a unique market place for Icelandic cod was reduced as fish traders from the Hansa towns of Hamburg and Bremen, and from England and Holland, started to buy cod directly in Iceland. It was cheaper than Norwegian cod but harder and therefore considered of lower quality. This was one of the arguments used by both the Hanseatic and local stockfish traders of Bergen, who considered that the direct cod fish trade from Iceland was to the detriment of the Bergen stock fish trade and the Hansa Kontor at Bergen. They aimed, in fact, at forbidding direct trade with Iceland without passing through Bergen.

Competition for the Bergen stockfish market increased in the sixteenth century as Icelandic stockfish became more attractive with the introduction of the new technology of softening dried cod, as discussed earlier. Moreover, next to Iceland, Trondheim became another alternative centre for direct trade in stockfish coming from northern Norway. Traders from Holland and Bergen were active in this trade. Wubs found no evidence that Bergen felt any competition from the Newfoundland cod fishery, or from the Dutch cod fishery developing on the Doggersbank in the North Sea. The former aimed at different markets than the Bergen stockfish, and the latter only started at the end of her period of study. It is interesting that Wubs found no indications of any decline in the volume of stockfish exported from Bergen. According to the Norwegian historian Arnved Nedkvitne, the Bergen fish export may have risen three to five times between 1520 and 1650 thanks to the Norwegian population growth and further commercialization of the cod fisheries. While Bergen lost its quasi-monopoly as the cod fish trading centre of northern Europe in the later Middle Ages, the new

²⁰ Nielssen (2001) 185–190, 186.

trade centres in Iceland, England, Trondheim, and Amsterdam were active in an expanding market, meeting a growing demand that could no longer be fulfilled by the Bergen stockfish trade alone.

The essay by Inês Amorim shows a similar development in early modern Portugal where English codfish traders entered a protected and regulated fish market with cod from Newfoundland in the seventeenth century. The Portuguese king, who since the later Middle Ages had increased his income by taxing fish, welcomed foreign imports of cod as a new source of tax revenue at a time when tax income from the Portuguese tuna fishery decreased.²¹ Eventually all cod entering Portuguese markets was brought in by foreigners. Demand for cod was such that measures against speculation had to be taken as traders of processed cod tried to stock the fish to wait for the prices to top. Studying the case of Porto, among other Portuguese maritime towns, Amorim explains that this happened at a time when the supply of marine fish of all types increased in Portuguese fish markets.

The growing demand for fish as an explanatory factor for the rise of certain fisheries and/or the import of fish from abroad is a central issue in this volume, and is used by several authors. Christiaan Bochove chooses a different, more general economic approach by focussing on the importance of the herring fishery for the economy of the province of Holland as a whole. Using a new model he developed for the assessment of income, costs, profit and value added of the herring fishery to analyze data on the catches of herring in Holland, he is able to assess the economic consequences of the herring fishery for the Dutch economy in the early modern era. Between 1500 and 1800 the share of the herring fisheries in Holland's economy declined from 8.9 percent of GDP to a humble 0.3 percent. Van Bochove assesses what happened in between, especially during the seventeenth and eighteenth centuries. He concludes that as costs did not increase and prices were rather inelastic, both changes in income and profit for those involved in the herring fisheries must have been caused by changes in the size of the catch. The close relation between profits and catches had important implications for entrepreneurial behaviour in the branch. Van Bochove presumes that the profits of the fisheries in the previous season deter-

²¹ It would be interesting to compare the development of the tuna fisheries of the Algarve region in southern Portugal with that of south-western Spain which seem to reflect some parallels. See Rahn Phillips (2006) 1121–1136.

mined whether or not investors were willing to put their capital in the herring fleet that was to set sail in the next season. High profits in the previous year attracted more capital for the following season, low profits reduced the enthusiasm to invest. An important issue for future research is why the average catch of herring was so volatile and why it declined over the long run between 1600 and 1800, while the practices in the herring fisheries hardly changed during this period. The changes in 'catchability' of herring to use the expression of Van Bochove must be related to the behaviour of the herring and to that of the fishermen. The question how fishermen did look for fish is raised by Bo Poulsen and will be touched upon in the next section, as communication and cooperation amongst fishermen were of great importance to optimise the chances of finding the fish and realising a good catch.

Consumption, communication and cooperation

Traditionally, the consumption of fish in medieval Europe was linked to Christian fasting practices, but this view has undergone some revision in recent years. Barrett and Van Dam, for instance, present new evidence supporting this movement away from Christian fasting as one of the main motors behind medieval fish consumption. One of the problems determining the impact of fasting rules on fish consumption is that they reflect intention more than reality. The archaeological evidence presented by Barrett *et al.* shows that the increase in marine fish consumption predated the Norman Conquest in England and the subsequent monastic reform movements. Van Dam, too, shows that in the Netherlands in the late medieval period, fasting did not necessarily imply the consumption of fish as substitute. Dairy products and eggs also played an important role as substitutes for meat.

This is not to say that fasting was not important for fish consumption. The fact that early medieval monasteries already maintained fisheries is an indication that fish was a part of the monastic diet long before the expansion of the marine fish horizon in inland Britain (Barrett *et al.*). Jahnke observes that the appearance of the word *hâring* in High German sources coincides with archaeological evidence of gutted herring found on the cathedral island at Wrocław during the foundation phase of the bishopric of Breslau in the tenth century. He argues that in winter months, when local waterways were frozen and freshwater fish was unavailable or more expensive, processed herring was an attractive

substitute when the eating of meat was forbidden. This may have been the case not only for the clergy but also, and perhaps even more so, for lay people who were also supposed to fast for 120 to 182 days a year. With at least 178 meatless days a year for lay people, the county of Holland was probably the champion in refraining from meat consumption in the Netherlands. Although this does not necessarily mean a higher fish consumption, it is nevertheless reasonable to assume that the high number of fasting days in Holland was an incentive for the consumption of fish and indirectly of the import of processed herring from Scania, and later for the development of the North Sea herring fisheries.

A much more important factor to explain the growing marine fish consumption from the high Middle Ages onwards is the growth of the European population, and its concentration in cities. In both England and Belgium, the marine fish horizon first expanded to wicks and towns. The rural hinterland only followed centuries later. Urbanisation, fishing and fish trade were closely linked. The fish market as the oldest nucleus of a town is a clear illustration of this.²² The growth of the urban population led to a rising demand for fish that could no longer be fulfilled only by the freshwater fisheries or fish farmers alone, as Barrett and Deligne observe.

Next to ecological factors, like the availability of certain species in certain ecosystems, cultural factors also determined consumption of fish. We have already mentioned the influence of fasting practices, but there were other 'cultural' factors such as the 'social status' of certain species. Petra van Dam extrapolates from evidence in various regions in the Low Countries that the greater the size and the higher the fat content of the fish, the higher its status was considered. Thus sturgeon was considered the most prestigious freshwater fish at the dinner table. Another large freshwater fish, the pike, enjoyed the special protection of the Burgundian duke Philip the Good in his capacity as count of Holland: it was forbidden to remove any plants from the banks of the Haarlemmermeer to avoid a lack of food for the pike in the lake. Seal, reckoned as fish, was prestigious enough to be presented by William of Orange at the dinner table when he received the English ambassador in 1565. In sixteenth century Holland, carp was the most popular freshwater fish, eaten by the elite during feasts. The relative late survival

²² Barrett *et al.* this volume. Verhulst (1999).

of fishponds in the surroundings of the governmental city of Brussels may be explained by a continuing demand for carp by the local elite (Deligne).

How did the fish horizon at sea expand? How did fishermen look for fish in the open sea and how successful were their techniques? This is one of the main questions that Bo Poulsen addresses in his paper on the Dutch herring fisheries in the North Sea. With references to marine scientists and economists, he observes that very little is known about the behaviour of modern fishermen, let alone of those in the past. Poulsen departs from the theory that fishermen have an interest in cooperating and sharing information on the location of fish when the fish aggregate in schools or patches. This is especially the case when the fish is to be caught far away from the home port. Under these conditions, a coordinated search would be more profitable than an individual search for fish in the open sea. The author then confronts this theory with the reality of cooperation and information sharing by Dutch herring fishermen from the end of the eighteenth and beginning of the nineteenth century.

For centuries herring fishermen from Flanders, Zeeland, and Holland co-operated on local, inter-city or regional levels in order to optimise their catch and to reduce their costs in searching, and their risks. In the 1580s an institution was set up, the *College van de Grote Visserij* (Council of the Great Fishery), in which most of the herring towns of Holland were represented. This body regulated the entire process of the production of salted herring in Holland, from the start of the catching season of the North Sea herring fishery until the sale of its final product, repacked in tuns. The main set of regulations remained practically unchanged until the start of the nineteenth century. As a result, the herring fishermen of Holland functioned as a kind of consortium that produced a standardized product. Part of the *College* regulations dealt with behaviour at sea, such as the need to stay away from other fishermen's nets, and signalling with flags and lights. By studying rare evidence on the actual practice of fishing and information sharing at sea, Poulsen shows how the communication between the fishermen and the *ventjagers* supported the broader sharing of information and cooperation amongst fishermen on the location of herring patches. The phenomenon of *ventjagen* entailed that while the herring fleet was out at sea, other boats, mostly old fishing vessels, went to meet the fleet in order to buy the first herring caught at sea from the fishing herring buses, sailing back immediately to sell the fish, called *maatjes*, at very high prices. This *ventjagen* was only permitted by consent from the *College*,

for about three weeks from the start of the season. All parties involved took advantage of this as the profit was shared among *ventjagers*, fishing boats, and crews, the latter sharing proportionally.

Institutions like the *College voor de Grote Visserij* may have stimulated and regulated cooperation and communication amongst fishermen, merchants, and others involved in the industry. As the contribution by Louis Sicking and Adri van Vliet demonstrates, public authorities in the Middle Ages played an important role, and they continued to do so in the early modern era, representing the interests of their fishing subjects. In late medieval Flanders, for instance, fishermen received support from the administrations of their towns and villages. Indeed, members of local governing institutions very often were involved in the fishery business themselves.

In wartime, local initiatives were taken to conclude fishing truces or exchange safe conducts on behalf of the fishermen with fishing towns in neighbouring France, for instance. The administrations of the coastal towns and villages also pressed the regional government of Flanders and later the central government of the Burgundian and Habsburg Netherlands to conclude such fishing truces or to take other protective measures, such as the equipping of convoy vessels or taking part in their financing. The central government was willing to do this as long as the fishing towns financed the major part of the protective measures themselves. Authorities in the Netherlands attempted to centralize all maritime activity under an Admiralty, and also tried to stimulate inter-provincial cooperation, but the different practices in the different regions proved too difficult to change. Thus, Flanders, situated closest to the warring French, stuck to its tradition of equipping expensive convoy vessels, their herring busses being too small to be equipped with artillery. Holland, on the contrary, generally refused to equip convoy vessels, urging its fishermen to equip their herring busses with some artillery, thus reducing the protection costs of its fishermen.

Sicking and Van Vliet are convinced that the geographical location of the major herring towns of Flanders, on the coast near France, and of those in Holland, located more inland and thus safer on the major rivers and more up north on the *Zuiderzee*, is a major factor in explaining the decline of the Flemish herring fishery and the rise of the Holland herring fishery. It should be noted that the dominance of Holland in the herring fisheries in the Netherlands was established before the outbreak of the Dutch Revolt, when the fisheries represented an important part of Holland's economy. Although the Dutch herring fishery remained

of great importance, both in the local and regional context of the fishing towns and in the European context of the North Sea fisheries as a whole, decline set in from the first quarter of the seventeenth century. Van Bochove confirms that the consequences of war were among the major factors in the development and profitability of the herring fishery of Holland in the seventeenth century, and pleads for further research on the sixteenth century.²³

The expanding fish horizon also had important social implications, as Annette de Wit illustrates in her paper. She focuses on the strategies women living in fishing communities developed in order to secure an income for themselves and their children when their husbands were fishing at sea. Studying two fishing villages in Holland, she reveals how fishwives had to combine different jobs in order to survive, and how they used their husbands' social networks to take advantage of their favourable legal position compared to other married women in the Dutch Republic. To a certain extent the position of fishwives was comparable to that of single women and widows. Because of the absence of their fishermen husbands, women were allowed to carry out legal transactions and to administer their own household. Yet, although the income of fishwives proved to be important for their respective households, these households could not survive without the fishermen. Fishermen and their wives may have been separated for long periods of time, but economically they were interdependent.

The male side of the story—how fishermen coped with the absence of women—is not explicitly addressed in this volume. This is not only due to the fact that women attract more attention by gender historians than men, but also because of the lack of sources on life on board fishing vessels in the pre-industrial period. Peter Pope describes the setting of the male communities formed by the migratory fishermen on the coasts of Newfoundland, thousands of kilometres away from their home ports, where their wives struggled for survival as did their counterparts in the Netherlands. Although more studies are needed to understand the consequences of the fisheries on the relations between the sexes, it is clear that the presence of men bridging the fish horizon at sea had major social and economic consequences for the families involved.

²³ A recent case study on the profitability of the sixteenth-century herring fishery: Sicking (2003).

The present collection of essays cannot pretend to treat all marine fisheries of the North Atlantic, North Sea and western Baltic in the Middle Ages and early modern era, yet combined the articles retrace some of the major developments of the marine fisheries of Western Europe and Newfoundland as well as the consequences for landscape, economy and society. The archaeologists represented in this volume have retraced the origin of the transport of marine fish inland in Iceland and the commercialisation of marine fish on the British Isles before and around the turn of the second millennium respectively. Their concept of the fish horizon, representing the distance between the location where the fish was caught to the location where it was consumed, proved very useful to connect most of the articles. The expansion of the fish horizon both on land and at sea represented the development of preserved marine fish as one of the major foodstuffs that played an essential part in the long distance trade of Europe in the Middle Ages and continued to do so in the early modern era.²⁴ The growing European population was responsible for a growing demand of marine fish, which in turn stimulated the development and commercialisation of the marine fisheries. This is the main explanatory factor of the origin and development of the production of salted herring in the Scania area, along the British coasts, and on board of the busses of the Low Countries, as well as of the stockfish production of Northern Norway, Iceland, and Newfoundland. The environmental, economic, social and political consequences of this vast production of preserved marine fish are a fascinating field of study that the contributions to this book witness. Hopefully they will stimulate others to look beyond the catch as well.

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²⁴ Hoffmann (2001).

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SECTION ONE

LANDSCAPE, SETTLEMENTS AND SPATIAL ORGANIZATION

CHAPTER ONE

'DARK AGE ECONOMICS' REVISITED: THE ENGLISH FISH-BONE EVIDENCE, 600–1600

James H. Barrett, Alison M. Locker and Callum M. Roberts¹

Introduction

Twenty-seven years ago—when Richard Hodges published his influential monograph *Dark Age Economics*—two observations regarding early medieval economy seemed clear.² Firstly, the transition from exchange of high-value prestige goods to low-value staples (and thus, in his view, from gift-exchange to market trade, from proto-urban settlements to true towns and from substantivist to formalist economics) was central to an understanding of European socio-economic change. Secondly, although complex and uneven in detail, this transition could be dated to the tenth and eleventh centuries. Hodges was, of course, not alone in these observations. The growth of trade and urbanism had long played an important role in defining the Viking age.³ Moreover, *Dark Age Economics* was one contribution to a movement within medieval archaeology that was heavily influenced by economic and neo-evolutionary anthropology.⁴ It thus found an audience primed for either reception or resistance.⁵

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² Hodges (1982).

³ E.g. Arbmman (1939); Jankuhn (1956); Blindheim (1975); Bencard (1981).

⁴ E.g. Grierson (1959); Callmer (1977); Randsborg (1980); Jankuhn (1982).

⁵ Astill (1985); Sawyer (1989).

Since then, however, archaeology has confirmed the existence of early (particularly eighth century) antecedents to many of North-western Europe's first towns, and of other early markets without urban populations.⁶ Concurrently, accessible surveys of the relevant historical evidence have emphasised the existence and scale of commercial transactions—including the exchange of basic staple goods—in Carolingian times.⁷ Wider paradigm shifts within archaeology have also peripheralised the neo-evolutionary basis of Hodges' original argument.⁸ It is thus not surprising to find that interpretations have changed with the times. For example, the economic complexity once associated with the end of the Viking age is now attributed to the reign of Charlemagne.⁹

These changing perspectives have not, however, forged a consensus regarding when market trade of basic commodities really began on a meaningful scale. There now exist both 'early' (c. eighth century) and 'late' (tenth–eleventh century or later) schools of thought. Many histories of medieval economy continue to espouse the traditional end of the first millennium, or even the twelfth and thirteenth centuries, as the period of fundamental economic change—including the growth of trade and urbanism.¹⁰ Moreover, given the scattered source material, historical studies of market trade in earlier centuries are seldom able to quantify the relative scale of this activity *vis-à-vis* later developments. This problem is critical. Almost fifty years ago, Grierson unequivocally demonstrated that market and non-market trade coexisted in early medieval Europe.¹¹ Answering the question 'when did fundamental economic change really happen?' thus becomes a matter of assessing the *degree* of market trade, or more realistically, of the relative importance of staple over prestige goods in exchange transactions.¹²

The present paper addresses this last critical issue. It asks when an unambiguously low-value, high-bulk, product—marine fish—was first harvested and traded on a large scale in medieval England. In doing

⁶ Cowie and Whytehead (1988); Hill *et al.* (1990); Ulriksen (1994); Kemp (1996); Feveile and Jensen (2000); Gardiner *et al.* (2001); see contributions in Hansen and Wickham (2000); Hill and Cowie (2001); Prestell and Ulmschneider (2003).

⁷ E.g. Verhulst (1995; 2002).

⁸ Gosden (1999) 88–105; Gerrard (2003) 172, 217–231.

⁹ Hodges (1988; 2000).

¹⁰ Andrén (1989) 593–594; Saunders (1995) 42–50; Moore (2000) 30–39; Dyer (2002) 101; Spufford (2002) 12; Griffiths (2003) 97–104.

¹¹ Grierson (1959).

¹² Barrett *et al.* (2000) 15.

so, it is possible to provide one measure of the character and chronology of the distinction between 'Dark Age' and high medieval economy. Previous work in Scotland¹³ has demonstrated the potential of fish-bone evidence to answer questions of this kind, and here we apply similar methods to the issue of economic change in medieval England and its European context. We argue that the most important change in English fishing between AD 600 and 1600 occurred within a few decades of AD 1000 and involved large relative increases in catches of herring (*Clupea harengus*) and cod (*Gadus morhua*), many of which were probably distributed by trade. It has long been suspected that marine fishing increased at some point in the Middle Ages,¹⁴ but the chronology, clarity and rapidity of the trend can now be fully appreciated. Sea-fish were caught and transported to inland sites, such as the proto-urban 'wic' of York, in earlier centuries, but the change in scale of this activity around the end of the first millennium is remarkable. Evidence of similar developments is slowly emerging across Europe, from the Baltic Sea region to the Northern Isles of Scotland.¹⁵ Although it is uncontroversial that the importance of trade increased in tenth and eleventh century Europe,¹⁶ it has rarely been possible to quantify the relative scale of activity either side of AD 1000—and thus to contextualise the significance of 'Dark Age' commerce.

Identifying medieval fish trade

With a few exceptions, syntheses of early medieval economic history have largely ignored fish trade.¹⁷ For historians, the reason is clear. They are limited to discussing the earliest written evidence rather than the origin of the practice itself. In an English context, most discussion begins in the thirteenth and fourteenth centuries with very limited inference possible from earlier sources.¹⁸ In Scotland, the earliest detailed historical evidence is of fifteenth century date.¹⁹ In Norway, where cod constituted c. 80 percent of exports by the high Middle Ages, the earliest

¹³ E.g. Barrett (1997).

¹⁴ Jones (1981; 1988); Locker (1988a).

¹⁵ Barrett *et al.* (2000); Enghoff (2000); Van Neer and Ervynck (2003).

¹⁶ Fossier (1999) 27; Griffiths (2003).

¹⁷ Cf. Hodges (1982); Dyer (2002); Verhulst (2002).

¹⁸ Nedkvitne (1976); Childs and Kowaleski (2000); Kowaleski (2000); Fox (2001).

¹⁹ Friedland (1983); McNeill and MacQueen (1996) 241.

reliable historical evidence dates to the twelfth century.²⁰ In Denmark and Sweden, the earliest references to the importance of herring are of similar date.²¹ In none of these cases is the earliest historical evidence likely to date the beginning of the trade. One must rely on the material record.

A variety of archaeological methods have been used to identify fish trade.²² At the simplest and most effective level, it is possible to identify the transport of marine fish (such as cod and herring) to inland sites and the long-range transport of northern North Sea and North Atlantic species (such as ling, *Molva molva*, and saithe, *Pollachius virens*, allowing for some historical changes in fish distributions) to southern sites. Distinctive butchery marks and skeletal element distributions can also indicate the presence of fish preserved for transport, but the necessary data are seldom published. Other more complex methods exist—based, for example, on differences in growth rates or stable isotopic signatures between fish populations—but these have thus far proven unreliable.²³ Guided by the principle of Ockham's Razor, this study addresses the origins of fish trade by exploring chronological and spatial patterns in the relative abundance (by number of identified specimens or NISP) of the most important marine and freshwater species exploited in England between 600 and 1600.

Appendices 1 and 2²⁴ provide a summary of the 127 English (including Cornish) assemblages surveyed, (figure 1). Collections were excluded from consideration if they were not recovered at least in part by sieving, could not be attributed to one of five two-century periods or did not yield at least 50 identified specimens. A few assemblages have also been excluded because they represent unique circumstances—such as shipwrecks²⁵ and fish gut contents.²⁶ The corpus is dominated by urban and 'proto-urban' sites, but effort has been made to include as many rural settlements as practicable without introducing poor-quality information (from unsieved assemblages, for example).

²⁰ Nedkvitne (1976) 250; Christensen and Nielssen (1996) 148.

²¹ Holm (1996) 177–178.

²² E.g. Barrett (1997); Perdikaris (1999); Locker (2001) 135–165; Van Neer *et al.* (2002).

²³ Van Neer *et al.* (2002); Ervynck *et al.* (in press).

²⁴ Available at <http://antiquity.ac.uk>.

²⁵ Hamilton-Dyer (1995).

²⁶ Irving (1998).

The sample size threshold is set low²⁷ given the small number of fish-bones from most pre-eleventh century (particularly rural) settlements. The sieving requirement is necessary given the impact of poor recovery on species representation.²⁸ Although it was not always possible to distinguish the sieved and unsieved portions of mixed assemblages, the degree to which sieving was practiced (partially or totally) does not show chronological patterning (Chi-Square = 5.62, df = 4, p = 0.230) and is thus unlikely to bias the overall results. Where known, the minimum mesh size used does vary by period (Kruskal-Wallis Chi-Square = 19.42, df = 4, p = 0.001), but the use of finer sieves is associated with eleventh century and later assemblages. Thus it is unlikely to be responsible for the patterns identified, in which large cod and related species became more common at the expense of smaller taxa such as eel and cyprinids (see below). It could, however, have a minor impact on the relative abundance of herring. Data are not available to compare preservation differences between samples,²⁹ but it is reasonable to assume that the species under consideration were not differentially preserved in different periods.

The 'fish event horizon'

Over the millennium under consideration, eight taxonomic groups dominate English fish assemblages. The marine taxa are herring and cod-like fishes ('gadids'—for present purposes this group is treated as including the related hake, *Merluccius merluccius*, and excluding the freshwater burbot, *Lota lota*). The freshwater taxa are fishes of the carp family (cyprinids) and pike (*Esox lucius*). The migratory taxa are European eel (*Anguilla anguilla*), salmon and trout (salmonids), smelt (*Osmerus eperlanus*) and flatfish (a group which includes flounder, *Platichthys flesus*, that enters fresh water, but also marine species). When these groups are compared using Correspondence Analysis (CA),³⁰ it is clear that virtually all 'catches' from the seventh to the tenth centuries were dominated by freshwater and migratory species (particularly cyprinids and eels) (figure 2a). Conversely, most eleventh century and later

²⁷ Cf. Amorosi *et al.* (1996) 133.

²⁸ Jones (1982); Vale and Gargett (2002).

²⁹ Cf. Barrett (1997).

³⁰ Baxter (2003) 136–145.

'catches' had far more herring and/or gadids. Flatfish are predictably intermediate between these groups, given their mix of freshwater and marine species. In the thirteenth to sixteenth centuries some assemblages were dominated by gadids alone. There is no distinctive pattern associated with the fifteenth to sixteenth centuries, when the English cod fishery expanded first to Iceland and later to Newfoundland.³¹ This implies that changes in fishing in the eleventh to twelfth centuries were more dramatic than better known later developments.

There are few exceptions to these general patterns. One thirteenth to fourteenth century case and one fifteenth to sixteenth century assemblage resemble pre-eleventh century examples because they are specialised collections consisting almost entirely of eel.³² Other outliers are related to site location. The few early assemblages with relatively high proportions of gadids and/or herring are all coastal (≤ 10 km from the shore) or estuarine as one might expect: two are from Hartlepool,³³ one is from Ipswich,³⁴ one is from London,³⁵ one is from Sandtun, Kent,³⁶ and one is from Southampton.³⁷ It may also be relevant that several of these latter outliers were wics (see below).

Site location does not bias the results as a whole. Only six coastal assemblages are recorded overall, and these are spread from the seventh and eighth to the fifteenth and sixteenth centuries (see appendix 1). There is an uneven distribution of estuarine (59 in total) and inland (62 in total) site locations by period (Chi-Square = 15.42, df = 4, $p = 0.004$). However, it is inland sites that are under-represented prior to the eleventh century, not *vice versa*. Thus this pattern strengthens the observation that non-marine species were preferred prior to the end of the first millennium AD.

The chronological patterning evident in the CA is largely dependent on the abundance of herring and gadids. The proportions of both show significant increases in the eleventh to twelfth centuries (figures 3a–3b). Herring did occur in seventh to tenth century sites, particularly the wics of York, Ipswich, London and Hamwic (Southampton). However, its importance increased fourfold in the eleventh to twelfth centuries

³¹ Jones (2000).

³² Grant (1988); Wheeler (1979).

³³ Locker (1988b).

³⁴ Locker and Jones (1985).

³⁵ Locker (unpublished).

³⁶ Hamilton-Dyer (2001).

³⁷ Bourdillon (1993).

(Mann-Whitney $U = 35.00$, $p \leq 0.001$). For cod-like fishes, different species show slightly different chronological patterns. Cod itself was virtually unexploited prior to the end of the first millennium AD. It first appeared as a significant component of the medieval 'catch' in the eleventh to twelfth centuries (Mann-Whitney $U = 41.00$, $p \leq 0.001$), after which its proportion of the total declined as it was joined by related species such as haddock, ling, saithe and hake (figure 3c). It is thus not surprising that recent research has shown that there was not even a word for cod in the Anglo-Saxon language of pre-Norman England.³⁸ As the marine species became more important, the proportion of freshwater taxa in the bone assemblages declined (figure 3d).

Some indication of the rapidity of these changes can be achieved by focusing on nineteen assemblages from the end of the first millennium that are datable to within circa one hundred years (figure 2b). These suggest that the increase in herring and cod fishing began between c. 975 and the mid eleventh century in York,³⁹ by c. 1050 to 1070 in London,⁴⁰ prior to c. 1030 in Southampton,⁴¹ between the late tenth and late eleventh century in Norwich,⁴² by the late eleventh to early twelfth century at Eynsham Abbey⁴³ and by the eleventh century at Northampton.⁴⁴ There is also a high proportion of herring in one tenth century assemblage from Northampton, but it contains only 55 bones and could be misleading.⁴⁵ In short, the marked increase in marine fishing was probably revolutionary in archaeological terms. This 'fish event horizon' must have occurred within a few decades either side of the end of the first millennium.

The wider European context and the fish trade hypothesis

The English chronology established here is broadly consistent with similar patterns emerging from zooarchaeological research across Europe.⁴⁶

³⁸ Sayers (2002).

³⁹ Jones (1988); O'Connor (1989).

⁴⁰ Locker (1997).

⁴¹ Hamilton-Dyer (1997).

⁴² Jones (1983).

⁴³ Ayres *et al.* (2003).

⁴⁴ Locker (1999).

⁴⁵ Locker (1999).

⁴⁶ Benecke (1982); Heinrich (1983); Perdikaris (1999); Barrett *et al.* (1999; 2000); Enghoff (2000); Clavel (2001); Makowiecki (2001); Van Neer and Ervynck (2003).

Examples include the eleventh century introduction of herring to the interior of Poland,⁴⁷ the ninth or tenth century appearance of this species at Menzlin, inland Germany,⁴⁸ the mid tenth to late twelfth century rise of gadids and herring in inland Belgium⁴⁹ and the thirteenth century increase in marine fish at inland sites in northern France.⁵⁰ There appears to be both inter-regional variability and a general trend towards the increasing importance of herring and gadids around or after the end of the first millennium. Future research must establish the degree to which the variation is apparent or real and thus whether the shift to marine fish consumption was as rapid elsewhere in Europe as it was in England. It would be surprising, however, if there was not some regional variability due to environmental or socio-economic factors and there are several clear exceptions to the general trend.

The main exceptions to the rule are Norway and the islands of the Baltic where marine species were of considerable importance in earlier centuries—arguably because fish were very accessible and other resources more limited in availability. In Norway, gadids (particularly cod, saithe and ling) and in some instances herring dominated the catch.⁵¹ In the Baltic islands, herring was the fish of choice.⁵²

Northern Scotland, which was under Scandinavian rule until the late Middle Ages,⁵³ provides an example of how the general trend could be mediated by local socio-economic circumstances. Pre-Viking age ('Pictish') fishing was limited in scope, producing modest numbers of bones from small fish easily caught from shore. In the ninth and tenth centuries, fishing for large cod, ling and saithe expanded, possibly due to the introduction of new food preferences by Norse migrants.⁵⁴ However, the intensity of fishing, particularly for these species, increased far more in the eleventh to twelfth centuries—consistent with the English and wider European trend.⁵⁵ These changes are indicated by stable carbon isotope analysis of human bone, the absolute quantity of fish-bone recovered, the ratio of fish to mammal bone, the ratio of inshore to

⁴⁷ Makowiecki (2001) 238.

⁴⁸ Benecke (1987) in Enghoff (2000) 126.

⁴⁹ Van Neer and Ervynk (2003) 40–41.

⁵⁰ Clavel (2001).

⁵¹ Lie (1988); Perdikaris (1999); Enghoff (2000); Barrett *et al.* (2003).

⁵² Benecke (1982); Enghoff (1999).

⁵³ Crawford (1999) 95–96.

⁵⁴ Barrett *et al.* (1999; 2001).

⁵⁵ Barrett *et al.* (2000).

offshore taxa and the ratio of cod family to other species (figures 4a–4d). In western Scotland, also under Scandinavian control, herring may have increased in importance following a broadly similar chronology.⁵⁶ In the eleventh to twelfth centuries, distinctive fish middens also appear which may derive from processing cod and related species for export.⁵⁷

The main species involved in the 'fish event horizon', herring and cod, were cured and widely traded by the time detailed historical records first appear—principally the twelfth century. Cod and other gadids were typically exchanged in dried (stockfish) or dried and salted form, whereas herring were salt-cured wet in barrels.⁵⁸ The Norwegian stockfish trade and the great herring fairs of the Sound, the Baltic and East Anglia are the most well known examples. All except the last are first recorded in the twelfth century.⁵⁹ The East Anglian herring fishery may have existed by 1086 based on the record of fishermen at Great Yarmouth in Domesday Book,⁶⁰ but earlier evidence is anecdotal at best.⁶¹ It is a reasonable hypothesis that the increasing catch of herring and cod around 1000 was concurrent with the early development of this pan-European fish trade—which then took approximately a century to enter the historical record.

In support of this suggestion, it is clear that marine species were increasingly abundant at both coastal (or estuarine) settlements, where local catches were possible, and inland sites (such as York, Northampton and Eynsham Abbey), where an element of trade can be assumed (figures 5–6). Butchery evidence is not consistently available to assess how the fish were processed,⁶² but some of them must have been cured for inland transport and storage. Many of the fish-bones from coastal and estuarine settlements (such as London, on the tidal Thames) may also represent preserved fish acquired by trade, but this is more difficult to prove.

Given the chronology of the zooarchaeological evidence, it may not be coincidental that two of the earliest explicit Anglo-Saxon references to fish trade also date to the end of the first millennium. The fictional fisherman of *Ælfric's Colloquy* (c. 987–1002) claimed 'I can't catch as

⁵⁶ Ingrem (2000); Cerón-Carrasco (2002).

⁵⁷ Barrett (1997); Barrett *et al.* (2000).

⁵⁸ Robinson (2000) 10.

⁵⁹ Christensen and Nielssen (1996) 148; Holm (1996) 177–178.

⁶⁰ Taylor (1988) 466.

⁶¹ E.g. Cushing (1988) 79–80.

⁶² Cf. Barrett (1997); Enghoff (1996); Locker (2001).

many as I can sell'⁶³ and the laws of Æthelred (code IV, c. 991–1002) set out tolls in London for boats containing fish.⁶⁴

Unfortunately, despite the likelihood that the 'fish event horizon' recognised here was partly associated with pan-European trade, it is not yet possible to differentiate local fishing and long-distance imports. The suggestion that some cod at eleventh century English sites may represent Norwegian stockfish, and that some herring could have come from the Baltic region, must remain a hypothesis. It is not until the thirteenth and fourteenth centuries that species such as ling and saithe, previously common in Norwegian assemblages, also appear in England in measurable numbers (figure 3c). This may indicate that only regional trade blossomed in the eleventh/twelfth centuries, to be supplemented by long-distance trade in the thirteenth/fourteenth centuries. We think it more likely, however, that additional species such as ling and saithe were simply added to the repertoire of both regional and long-range trade once cod could no longer satisfy demand. This latter interpretation is supported by the observation that other species (such as hake) that were produced by English rather than Scandinavian fisheries also became more common in the thirteenth to fourteenth centuries (figure 3c).⁶⁵

In sum, regional, and probably long-distance, fish trade began on a significant scale around the end of the first millennium. It presumably developed from the more modest transport of herring to inland sites such as York that can be observed from the seventh to tenth centuries. This earlier pattern probably also represents trade in a market sense, but could alternatively be explained by more socially embedded provisioning arrangements sometimes referred to as indirect subsistence.⁶⁶ It is in these terms that one can understand early records of satellite fisheries, such as one on the North Devon coast granted to the inland monastery of Glastonbury by King Ethelwulf in the mid ninth century.⁶⁷ Prior to c. 1000 much professional fishing may have been done for elite patrons rather than public sale.⁶⁸

⁶³ Swanton (1975) 110.

⁶⁴ Robertson (1925) 73.

⁶⁵ Cf. Kowaleski (2000).

⁶⁶ Hoffmann (1996) 636; O'Connor (2001).

⁶⁷ Fox (2001) 47.

⁶⁸ Cf. Hoffmann (1996).

*Technological innovation, environmental change and
Christian fasting practices*

Having raised the argument that marine fish became common around the end of the first millennium due to the growth of trade, it remains necessary to address alternative interpretations and other contributing factors. Three of the most important potential 'confounding variables' are the impact of technological innovation, environmental change and Christian fasting practices. Each will be discussed in turn.

It has long been suggested that the rise of sea-fishing in medieval Europe was attributable to the adoption of floating 'driftnets'.⁶⁹ Reservations regarding the danger of technological determinism aside, the zooarchaeological evidence is no longer consistent with this interpretation. Driftnets are unsuitable for cod, which was increasingly exploited at the same time. This species was caught predominately by hook and line throughout the Middle Ages.⁷⁰

Environmental change has the potential to act as a push or a pull factor—driving medieval Europeans to the sea by limiting terrestrial resources or pulling them in by increasing the availability of marine fish. The first possible push factor, a reduction in agricultural production, can be ruled out from the start. The centuries around the end of the first millennium marked the height of the Medieval Warm Period⁷¹ and a time of large-scale intensification of agriculture in Britain and Europe.⁷² The expansion in sea-fishing was contemporary with these developments.

It is more convincing that the shift to marine fish consumption and trade was partly related to a decrease in the availability of freshwater fish—due to siltation from more intensive and extensive agriculture, the proliferation of mill dams, increased nutrient loads (from growing urban populations and industries) and the intensity of inland fishing itself.⁷³ The English fish-bone data surveyed here do show a decrease in the proportion of freshwater and migratory fish after the end of the first millennium (figure 3d), but it is not yet possible to demonstrate whether this was an absolute decrease in the catch or simply a relative

⁶⁹ Jones (1981); Benecke (1982); Van Neer and Ervynck (2003).

⁷⁰ Robinson (2000) 12.

⁷¹ Dahl-Jensen *et al.* (1998); Barber *et al.* (2003).

⁷² Fossier (1999); Dyer (2002) 26.

⁷³ Hoffmann (1996); cf. Ervynck and Van Neer (1994).

decline *vis-à-vis* marine species. Changes in the relative contributions of fish compared with other forms of food in England cannot be assessed due to the common practice of analysing only sub-sets of fish-bone from each excavation, which cannot be compared to the quantity of mammal bone. Based on other evidence, however, it is clear that freshwater fishing was both more regulated and more intensively practiced in the centuries after 1000. Elite control of fisheries became the norm,⁷⁴ many excavated fish traps (principally for migratory species such as eel and salmon) from Britain and Ireland were built in the eleventh to thirteenth centuries⁷⁵ and formal pisciculture in fishponds was probably introduced to England in the eleventh and twelfth centuries.⁷⁶ Thus the growth in marine fishing was concurrent with attempts (successful or unsuccessful) to expand and secure access to supplies of freshwater fish.

Environmental changes influencing the abundance or distribution of herring and cod, and thus their accessibility, are potential pull factors. Climate influences the basic productivity of both species, which in turn has an impact on their spatial distributions.⁷⁷ However, palaeoenvironmental evidence suggests that the years around 1000 were probably a time of low rather than high productivity for the fish available to most English and European fishermen. Cod and herring are arcto-boreal species, thus temperature affects them differently in different parts of their ranges. In the North and Baltic Seas, warmer temperatures depress production, while in northern waters such as the Norwegian and Barents Seas, warm weather increases productivity.⁷⁸ Climate proxies across the North Atlantic and from cored sediments of the Skagerrak support the view that temperatures were anomalously warm around 1000.⁷⁹ This suggests that increased local availability is unlikely to have been a pull factor driving the growth in fish exploitation shown here. Climate could only have been a relevant variable if *most* of the fish remains represent imports from, for example, Norway. A 'butterfly effect' of this kind, in which distant increases in fish availability might have a dramatic effect on English diet and economy, is conceivable but unlikely. It is argued above that some Norwegian cod may have been imported, but

⁷⁴ Hoffmann (1996) 653.

⁷⁵ E.g. O'Sullivan (2001) 295; Turner (2002) 105.

⁷⁶ McDonnell (1981); Taylor (1988) 466.

⁷⁷ E.g. Alheit and Hagen (1997).

⁷⁸ Brander (2000); MacKenzie and Visser (2001); Hamre (2003).

⁷⁹ Hass (1996); Dahl-Jensen *et al.* (1998); Barber *et al.* (2003).

it is highly improbable that such imports constitute the majority of the English material. Moreover, a predominately northern origin can be ruled out for herring given the Baltic and North Sea foci of its main medieval fisheries.⁸⁰

Temporal changes in Christian fasting practices may have influenced the level of marine fish consumption. The role of fish in early medieval Christian diet remains poorly understood. It is clear, however, that the practice of fasting formalised by St. Benedict's Rule and subsequent monastic regulations⁸¹ was also applied to the English *secular* community by seventh century and later Anglo-Saxon law.⁸² The precise number of fast days per year varied through time and according to the rigour of the community in question. Nevertheless, the meat of quadrupeds would typically have been forbidden during 40 days of Lent, 40 days of Advent before Christmas, possibly 40 days following Pentecost and on the eves of Christian celebrations throughout the year.⁸³ This practice is known to have had a major impact on the demand for fish in the later Middle Ages.⁸⁴ However, some authorities dispute that they were widely accepted as components of monastic fasts prior to the twelfth century,⁸⁵ or suggest that monastic reforms following the Norman conquest were largely responsible for spreading this fashion among England's wider population.⁸⁶

These arguments are both problematic in the present context. The fact that fish were seen as delicacies by the first generation of the austere Cistercian reform⁸⁷ tells us little about what was eaten during Lent in eleventh and twelfth century English towns and villages. Even within a monastic setting, Cistercian sources may reflect reforming zeal more than previous ecclesiastical practice. The late tenth or early eleventh century poem, *The Seasons for Fasting*, is probably the most important source relating to this vexed problem. It ridicules a wayward priest for eating oysters and other fish before noon during Lent.⁸⁸ This text could be interpreted as implying that fish were unacceptable in a period of

⁸⁰ Robinson (2000).

⁸¹ Dembinska (1986).

⁸² Swanton (1975) 3; Hagen (1992) 131.

⁸³ Hagen (1992) 127–134.

⁸⁴ Woolgar (2000).

⁸⁵ McDonnell (1981) 22; Dembinska (1986) 155.

⁸⁶ Woolgar (2000) 36.

⁸⁷ McDonnell (1981) 22.

⁸⁸ Magennis (1999) 87.

fasting. However, a close reading makes it clear that the timing, not the content, of the meal was at issue. Rather than indicating that fish were unacceptable for fasting around the end of the first millennium this source actually implies the reverse. The poem also weakens Woolgar's argument that a fashion for rigorous lay fasting, and thus increased fish consumption, was inspired by reform movements introduced following the Norman conquest (presumably including the Cistercians).⁸⁹ This hypothesis can now be laid to rest by the archaeological evidence itself. The increase in marine fish consumption predated the Norman conquest in England and is not evident until the thirteenth century in northern France.⁹⁰

If one were to seek an explanation for increased fish consumption in changes of monastic fashion the best candidate would be the Benedictine reform of the tenth century. In England, it culminated c. 970 in production of the *Regularis Concordia*⁹¹ and the translation of St. Benedict's Rule into Old English.⁹² Neither of these sources, however, provides specific instructions regarding the role of fish in monastic diet.⁹³ We are thus left in rather murky water, cleared only by knowledge that earlier monastic communities did maintain fisheries (such as the North Devon example belonging to Glastonbury noted above). It thus seems likely that fish were part of monastic diet (and by implication, presumably secular fasts) long before the 'fish event horizon'.⁹⁴

The commercial revolution

Having dismissed several alternative explanations for the increase in sea-fishing—in whole or in part—it is necessary to return to the growth of urbanism and the trade of staple goods. The connection between these developments and the 'fish event horizon' is more convincing. When herring and cod first appeared in the zooarchaeological record of medieval England it was predominately in urban rather than rural sites. The chronology differs by species, but each was first eaten in wics

⁸⁹ Woolgar (2000) 36.

⁹⁰ Clavel (2001).

⁹¹ Symons (1953).

⁹² Kornexl (1998) 119.

⁹³ Symons (1953) xxxv; Fry (1981).

⁹⁴ See also Hoffmann (1996) 638.

or towns, and only later in rural settlements (figures 7a–7b). Herring are found almost exclusively in urban settlements until the eleventh century. When cod were introduced to the English diet around AD 1000, consumption of this species also took c. 400 years to spread to the hinterland. There are not enough rural sites yielding ≥ 50 identified fish-bones to compare the data statistically (see appendix 1), but this problem itself confirms the pattern. Herring and cod are simply not found in the countryside in any great numbers until long after their introduction to towns, even in cases where preservation and recovery were both excellent.⁹⁵ Sea-fish also first appear in inland urban rather than rural settlements in tenth and eleventh century Belgium, where some of the best comparative evidence exists.⁹⁶

The possible relationship between urbanism, fishing and fish trade is further highlighted by more anecdotal evidence. Verhulst has observed that in many of medieval Europe's earliest cities 'the location of a fish market denotes one of the oldest urban nuclei'.⁹⁷ Moreover, the eleventh century increase in sea-fishing is concurrent with an archaeologically documented increase in the capacity of Northern European cargo ships, from a maximum of c. 20 tons around 1000 to c. 60 tons by 1025.⁹⁸ It seems likely that the concentration of population in England's (and continental Europe's) early towns produced a demand for fish, particularly during periods of fasting, which outstripped the potential of freshwater resources (due to both social and environmental limitations on this resource)—leading to an increase in sea-fishing and the development of long-range trade in this product. The herring found at England's wics are early portents of these interrelationships, but events around the year 1000 mark their most significant expression.

In some respects these conclusions are exactly as current research on medieval economy might lead us to expect. Firstly, there *was* a modest trade of a low-value staple product—marine fish—to England's proto-urban settlements from their inception to the tenth century. Whether these goods represent market transactions or indirect subsistence may depend on one's *a priori* assumptions, but there is no theoretical basis on which to exclude the former. In addition to the arguments of Grierson⁹⁹

⁹⁵ E.g. Barrett (2002).

⁹⁶ Van Neer and Ervynck (2003) 40–41.

⁹⁷ Verhulst (1999) 84.

⁹⁸ Crumlin-Pedersen (1999) 12.

⁹⁹ Grierson (1959).

and Verhulst¹⁰⁰ cited in the introduction above, it is worth noting that recent reassessments of economic anthropology (including early work on the Trobriand Islands—on which *Dark Age Economics* and related studies were based) also illustrate the co-existence rather than mutual exclusion of non-market and market trade.¹⁰¹ Secondly, the large-scale increase in fishing and fish trade coincided with the traditional start of the so-called commercial revolution of the Middle Ages, around the end of the first millennium.¹⁰² It is thus entirely consistent with a variety of historical indicators. As Fossier has put it, ‘almost all the observations which one can make, whatever the preoccupations of the individual historians, points to the tenth century as the age of growth, of take-off, of rising, or some such phrase.’¹⁰³

The importance of the present evidence, however, lies in the fact that it clearly represents the beginning of an economic phenomenon—rather than simply the earliest historical documentation of that phenomenon. It is also remarkable that the English transition to marine fishing was so rapid, and that it seems to represent the clearest change in a time-series that includes well-documented later developments such as England’s fifteenth century Iceland fishery.¹⁰⁴ The long-term *archaeological* ‘histories’ of other bulky low-value products—such as querns,¹⁰⁵ meat¹⁰⁶ and grain¹⁰⁷—remain to be fully written. For the time being, however, fish-bones may join more traditional materials such as pottery as one of the clearest archaeological indicators of the distinction between ‘Dark Age’ and later medieval trade.

Appendix 1 (available at <http://antiquity.ac.uk>). Summary information regarding the 127 fish-bone assemblages surveyed (see Appendix 2 for references).

Appendix 2 (available at <http://antiquity.ac.uk>). Full references for the assemblages surveyed.

¹⁰⁰ Verhulst (2002).

¹⁰¹ Gregory (1997) 41–70.

¹⁰² Lopez (1976); Moore (2001) 4.

¹⁰³ Fossier (1999) 27.

¹⁰⁴ Jones (2000).

¹⁰⁵ Parkhouse (1997).

¹⁰⁶ O’Connor (2000); Rixson (2000).

¹⁰⁷ Rowley-Conwy (1988).

Fig. 1. Location of the 127 English fish-bone assemblages, dating from AD 600–1600, considered in this study.

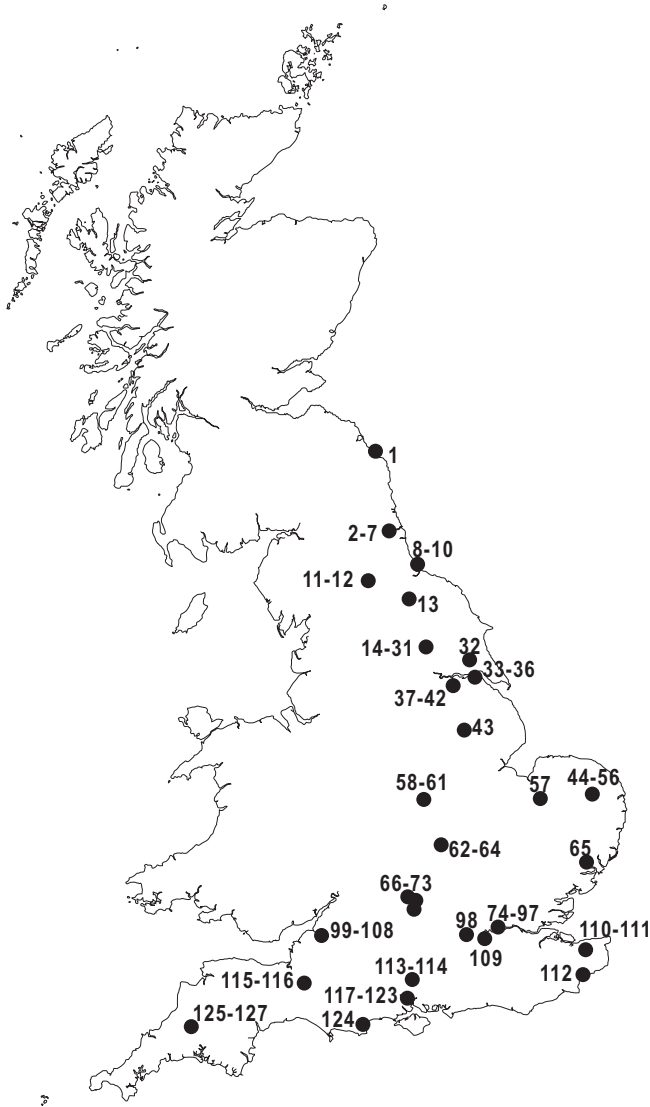


Fig. 2. (a) Axes 1 and 2 of a Correspondence Analysis based on the abundance (by NISP) of the eight most common fish taxa in 127 English archaeological assemblages. Each assemblage is coded by the two-century period to which it best belongs: seventh to eighth (7), ninth to tenth (9), eleventh to twelfth (11), thirteenth to fourteenth (13) and fifteenth to sixteenth (15). The taxa with the highest contributions (out of a total of 1) to component 1 are eel (0.44), gadids (0.23), herring (0.16) and cyprinids (0.12). Gadids (0.36), herring (0.35) and flatfish (0.16) contribute most to component 2. With the exception of a few unusual cases discussed in the text, assemblages that predate the eleventh to twelfth centuries are associated with eel and cyprinids—migratory and freshwater taxa—rather than herring and gadids. (b) The Correspondence Analysis in (a) redisplayed to show only those assemblages from around the end of the first millennium AD that can be dated to within c.100 years. One assemblage predating approximately AD 1030, but without a clear start date, is also included. The abbreviations indicate early (e), middle (m) and late (L) within a century. These results suggest that the marked increase in herring and gadid fishing occurred within a few decades of AD 1000.

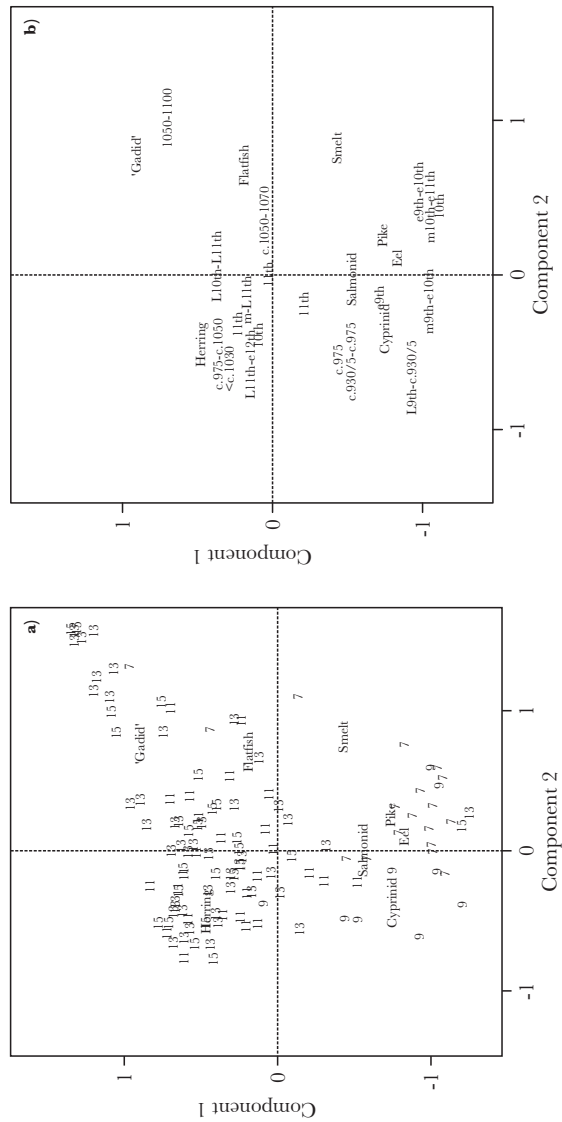


Fig. 3. (a through c) Boxplots showing the percentages of common marine species in English fish-bone assemblages from AD 600 to 1600 (based on the number of identified specimens). (d) For comparison, the percentage of fresh water and migratory taxa is also shown—based on cyprinids, pike, perch, eel, smelt, salmonids and flatfish (many of which are probably flounder, which enters fresh water).

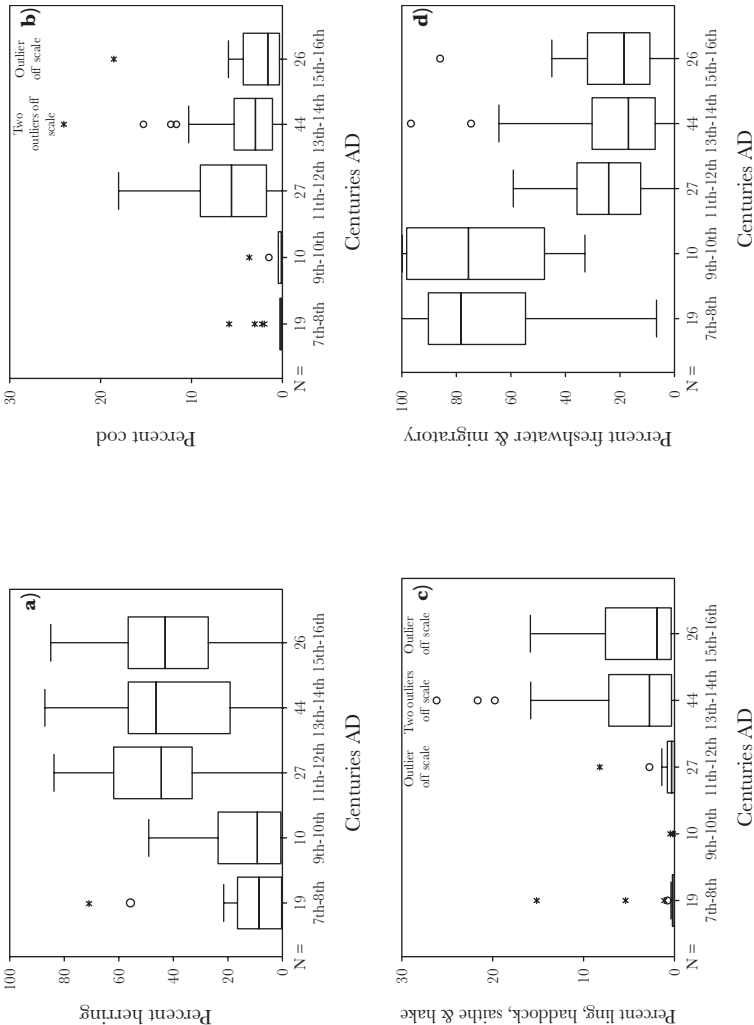


Fig. 4. Boxplots showing increases in the intensity of fishing, and the importance of cod and related species, in northern Scotland during both the ninth/tenth and eleventh/twelfth centuries AD. The preceding 'Pictish' period covers approximately the fourth to eighth centuries. (a) The number of fish-bones recovered. (b) The ratio of fish-bone to mammal bone. (c) The ratio of inshore to offshore taxa—based on a comparison of ling (*Molva molva*) and torsk (*Brosme brosme*) to rocklings (*Ciliata* or *Gaidropsarus* species), wrasse (Labridae) and cottids (Cottidae). (d) The ratio of cod family to all other fish. The data are based on NISP figures and have been taken from Barrett and Oltmann (1998); Barrett *et al.* (1999; 2001) and references therein.

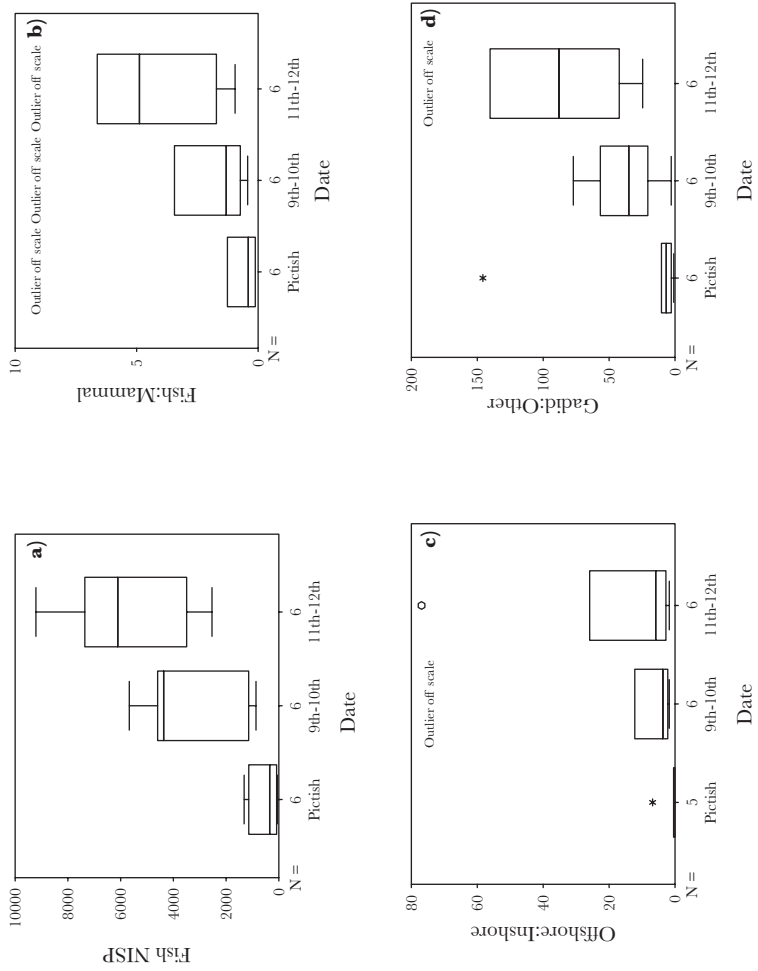


Fig. 5. The percentage of cod (by NISP) in English inland fish assemblages of the (a) ninth/tenth and (b) eleventh/twelfth centuries. London is omitted as it lies on the tidal Thames and is thus estuarine.

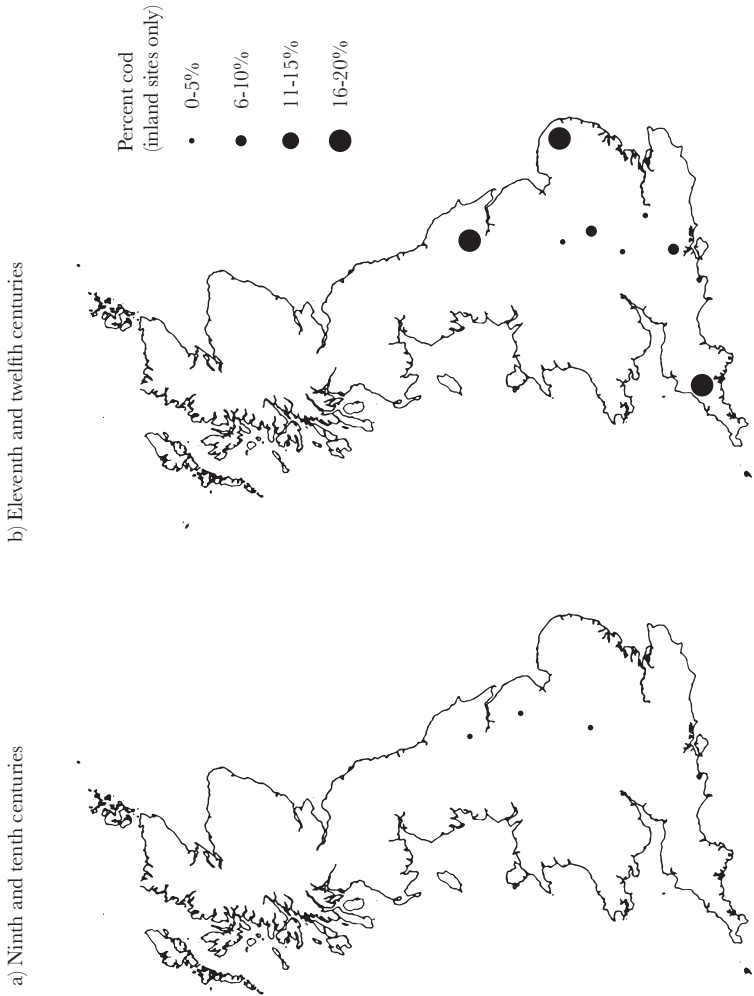


Fig. 6. The percentage of herring (by NISP) in English inland fish assemblages of the (a) ninth/tenth and (b) eleventh/twelfth centuries.

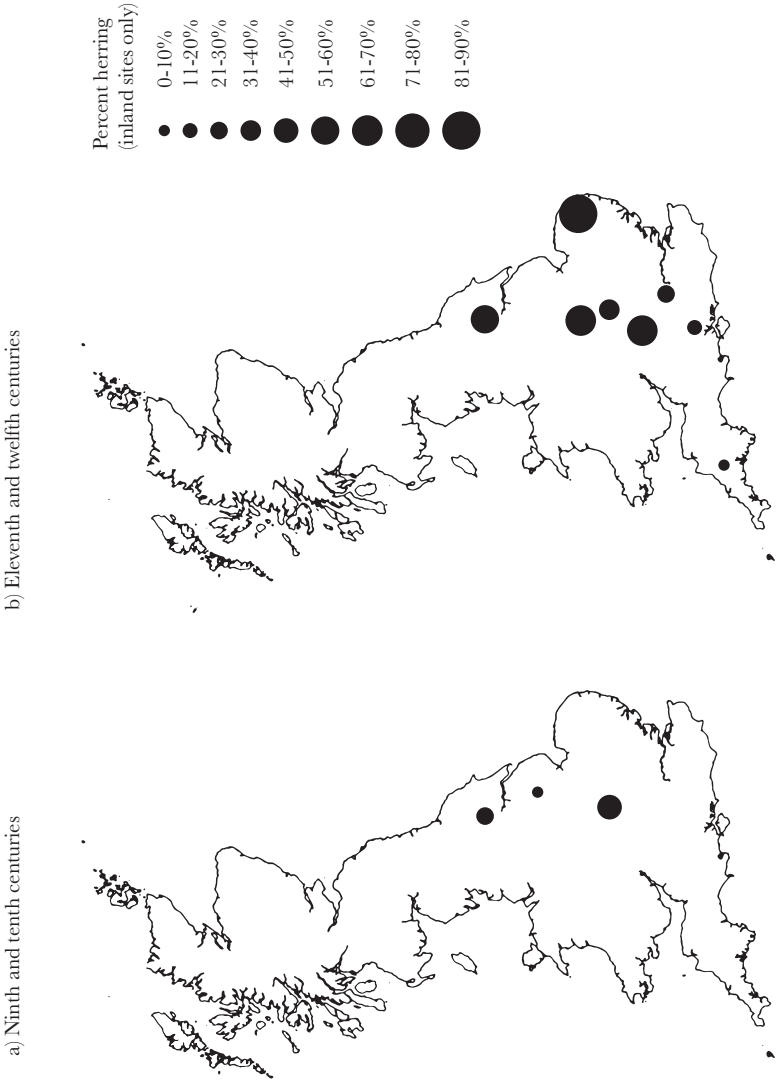
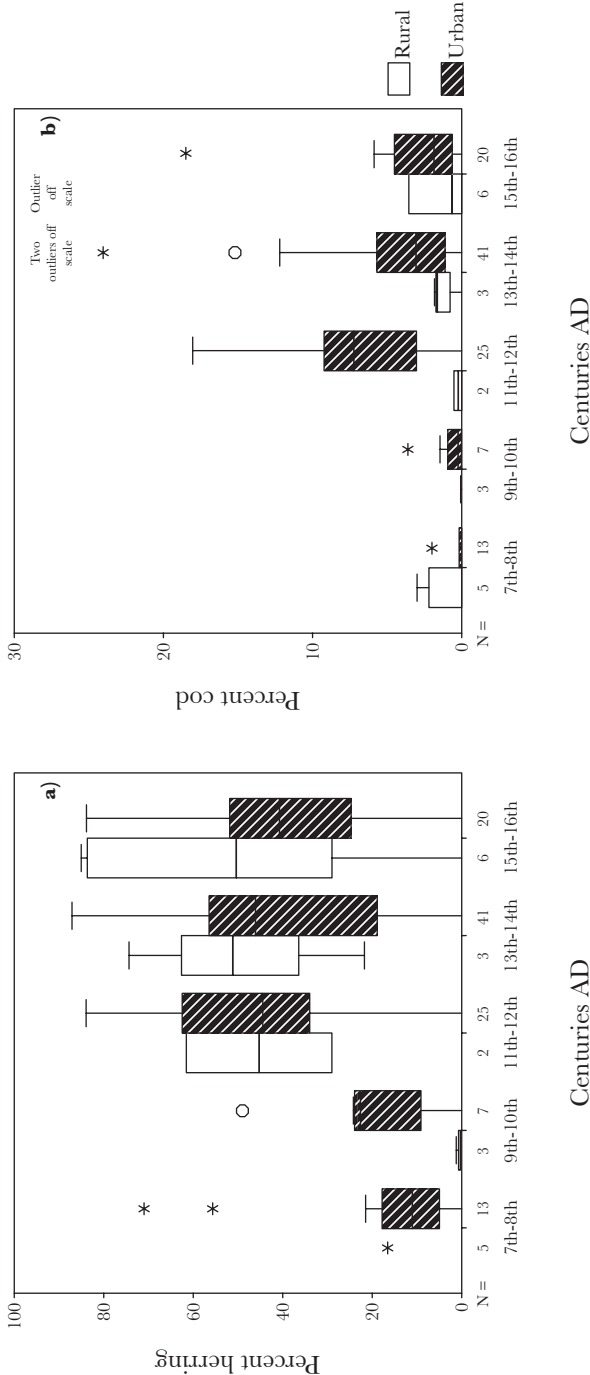


Fig. 7. Boxplots showing the percentages of (a) herring and (b) cod in English urban (including proto-urban 'wic') and rural settlements from AD 600 to 1600 (based on NISP).



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CHAPTER TWO

VIKING AGE ECONOMICS AND THE ORIGINS OF COMMERCIAL COD FISHERIES IN THE NORTH ATLANTIC

Sophia Perdikaris and Thomas H. McGovern¹

The origins of commercial fishing: old problems and new insights

This paper presents the results of sustained investigations in Iceland over the past two decades, which have produced large archaeofauna from both coastal and inland sites dating from the ninth to the nineteenth centuries. It seeks to place these collections in the wider context provided by new inter-regional syntheses and to present a series of analytical approaches to understanding patterning within fish-dominated archaeofauna. A multi-indicator approach is applied to the complex issues of distinguishing fish consumer and fish producer sites, and the still more complex problems of distinguishing probable subsistence production from possible market production on coastal sites.

Nearly a decade of investigation of Viking-age inland sites around the highland lake Mývatn in northeastern Iceland has produced archaeofauna rich in domestic mammals and freshwater fish, but also containing significant amounts of apparently preserved salt water fish.² Work in the West Fjords of northwestern Iceland has produced fish-rich archaeofauna

¹ We would like to thank the many scholars who have so kindly provided practical assistance, data, and sound advice in the field and in the laboratory, both in the US and in Europe. We would also like to thank the many student assistants who contributed to the laboratory analyses, particularly Colin Amundsen, Yekaterina Krivogorskaya and Konrad Smiarowski. The REU students especially Hugo Asurza, Dmitri Chitov, Olexandr Volkov, Eduardo Martinez, Courtney Scott and high school students Shaye Storm and Elina Melamed. Support has been generously provided by the US National Science Foundation (Office of Polar Programs Arctic Social Sciences and Anthropology Programs), the Icelandic Science Council, the National Geographic Society, the PSC-CUNY grants fund, CUNY Northern Science and Education Center, The Claire and Leonard Tow named professorship, and the Leverhulme Trust Landscapes circum Landnám project. This paper is a product of the North Atlantic Biocultural Organization (NABO) research cooperative.

² McGovern, Perdikaris *et al.* (2001); McGovern *et al.* (2005).

from coastal sites (both classic deeply stratified farm mounds and shallow seasonal fishing stations) dating (from the twelfth to the nineteenth centuries).³ These sites have all been comparably excavated (stratigraphic excavation with 100 percent sieving) and recorded into a common data management system,⁴ and provide the basis for systematic comparison between archaeofauna. Thanks to the support of the Leverhulme Trust's *Landscapes Circum Landnám* project,⁵ a series of radiocarbon dates and Carbon and Nitrogen isotopic assays are also now available for Viking-age human and animal burials in the inland Mývatn region, providing a check and supplement to the (zooarchaeological) evidence.

This Icelandic work is placed against a background of comparable archaeofauna from elsewhere in the North Atlantic, and this paper has been particularly inspired by synthetic work by James Barrett and his collaborators.⁶ Barrett and his co-workers have recently made use of all available datable British archaeofauna to define a surprising but convincing 'fish event horizon' of c. AD 950–1050).⁷ Prior to this temporal and spatial horizon, marine fish-bones are virtually absent on any inland site in Britain, and the dense 'fish middens' documented by many workers in Northern Scotland and the Northern Isles also seem to post-date the horizon. The 'fish event horizon' appears as an archeological event horizon (constrained at present by the limitations of radiocarbon dating) without evidence of a gradual local process of development. There is an emerging consensus among workers active in the Hebrides, Orkney, and Shetland that deep-sea marine fishing intensified with the arrival of the Scandinavians, and that the Celtic peoples of the Northern and Western isles were probably not engaged in large scale deep sea fishery during the later Iron Age.

This zooarchaeological pattern is also reflected in the far more terrestrial isotopic signatures of the bones of pre-Norse island human populations, which suggests a significant increase in seafood consumption following the Scandinavian settlement.⁸ It thus appears that large-scale production and exchange of dried fish did not originate within the British Isles. Any evidence for extensive exchange between coastal

³ Amundsen (2004); Amundsen *et al.* (2005); Edvardsson *et al.* (2004; 2005); Krivogorskaya *et al.* (2005).

⁴ NABONE 8.0. Perdikaris *et al.* (2004).

⁵ Edwards (2004).

⁶ Barrett (1997; 2000; 2001; 2004; 2005; this volume).

⁷ Barrett, Locker and Callum (2004; this volume).

⁸ Barrett *et al.* (1997; 2001); Cerron-Carrasco (1998); Nicholson (1998).

and inland sites elsewhere in the North Atlantic/North Sea region prior (to c. 1000) becomes particularly significant. One potential source for the fish event horizon in Britain and the general expansion of marine fishing in the eleventh-early twelfth century are the Scandinavians.

The Scandinavian connection?

Fishing, hunting of sea mammals and sea birds, and the collecting of shellfish and sea-bird eggs were all features of Scandinavian subsistence economies far back into prehistory. Most Nordic farmers of the later Iron Age probably spent as much time aboard a boat as behind a plough, and the notion that Scandinavian coastal subsistence economies stood upon 'one green foot and one blue foot' is well established in Nordic archaeology.⁹ The investigation of the interaction of marine and terrestrial economies remains an important regional research topic that is now attracting the sustained attention of several interdisciplinary, international research programs.¹⁰ Even for inland settlements in Atlantic Scandinavia, the sea remained the lifeline of northern existence, with seals, seaweed, sea-bird eggs and marine fish travelling many kilometres from the shore.¹¹

During the Viking age (traditionally c. 750–1100), Scandinavian peoples and their dual maritime/terrestrial economies expanded into northern Europe, and populated the offshore islands of the North Atlantic, briefly reaching North America by the year 1000. Viking age society was strongly competitive, and chieftains employed war, piracy, 'protection racket' threats (Danegeld), and the control of distribution of both staple and more prestigious goods to attract and hold followers both in the ancestral homelands and in the new lands of the Atlantic expansion.¹² A key element for these expansionist movements and the subsequent accumulation of wealth was intensive marine fishing and the production of air-dried cured fish.¹³ This staple product could be stored for five to seven years without salt or refrigeration, and provided a source of light, portable, and highly nutritious protein to provision farm households, travellers, boats, crews, and marauding raiders.

⁹ Bertelsen (1991).

¹⁰ McGovern (2004); Edwards *et al.* (2004).

¹¹ McGovern (1985); McGovern, Perdikaris *et al.* (2001), McGovern *et al.* (2005).

¹² Vésteinsson *et al.* (2002); Perdikaris and McGovern (2005).

¹³ Perdikaris (1999).

While a range of preservation methods were used, the two most common products were 'stockfish' (air dried in the round, with most of the vertebral column left in the finished product) and *klipfisk* (air dried as a flattened product, with the upper thoracic and precaudal vertebrae largely removed along with the head). Stockfish production is possible only where temperatures fluctuate around the freezing point for months at a time, and strong winds aid the freeze-drying process. The Lofoten and Vesterålen islands in arctic Norway have ideal environmental conditions for winter stockfish production, and have produced some of the earliest archaeological evidence for intensive stockfish production, extending back to the early Iron Age.¹⁴ *Klipfisk* can be produced under a wider range of temperatures, sometimes being dried simply by being spread over beach cobbles. Stockfish and *klipfisk* can be produced from a range of white-fleshed (non-oily) fish, but the cod family (gadid) fish have traditionally been the main species used. Stockfish are best made from individual fish between 60 and 110 cm in live length, while *klipfisk* are best made from fish around 40–70 cm in live length.¹⁵

From the twelfth century onward, there is abundant historical documentation for the large-scale production of stockfish from the Lofoten and Vesterålen islands, and the commercial-scale production of both stockfish and *klipfisk* from the Orkneys, Shetland, and (by c. 1250) from Iceland.¹⁶ By the high Middle Ages, the preserved Atlantic fish trade underwrote much of the mercantile life around the North Sea and the Baltic, and fish production was standardized into strictly graded named categories. The naturally variable product of a prehistoric fishery along with the prehistoric local social networks of exchange that were embedded in the cultural context of multi-stranded interactions between individuals, lineages, and localities was transformed into a socially disembedded, standardized, uniformly graded commodity which could now play a wider economic role. Now dried fish had been transformed from a variable local product of local artisanal fishers into a commoditized economic abstraction to be bought, sold, and borrowed against by prosperous men in counting houses far from the windy beaches where fish were landed and butchered.¹⁷

¹⁴ Perdikaris (1996; 1998).

¹⁵ Perdikaris (1999).

¹⁶ Nielssen (1994); Nielssen and Christensen (1996).

¹⁷ Gade (1951).

This historical cod trade of the twelfth century and after is well known, but far less well understood are its origins. Where and when did a transition take place from an ancient artisanal fishery run by local chieftains to a new proto-capitalist international commercial fish trade? Contemporary documentary references to fishing before the twelfth century are rare. The colourful Icelandic sagas (written down 200–300 years after the close of the Viking age) cheerfully ignore most issues of daily subsistence in favour of dialogue and character development,¹⁸ and the medieval Icelandic Grágás law code¹⁹ barely mentions the fish whose bones had already become the single most common object dumped onto contemporary midden heaps. It is up to archaeology and environmental science to illuminate the early history of the cod trade, and the critical transition from a local to a global product.

Fortunately, the past three decades have seen a dramatic expansion in environmental archaeology in the North Atlantic area, with major projects ranging geographically from North Cape to Greenland and extending from the pre-Viking Iron Age down to the early modern period of known commercial fisheries.²⁰ Major analytical advances have also been made in the identification and quantification of fish-bone assemblages, and common standards of recovery, identification, and data management have been broadly achieved. Excavated fish-bone collections now routinely number in the hundreds of thousands of identified specimens, most from contexts well dated by radiocarbon and volcanic tephra as well as artefact association. These data sets are increasingly being integrated into regional syntheses which, for all their inevitable limitations, are producing some clear and unexpected patterns. International collaboration has been advanced by organizations like the *International Council for Archaeozoologists Fish Remains Working Group* (ICAZ FRWG) and the *North Atlantic Biocultural Organization* (NABO) cooperative.²¹ These groups have taken the problem of the commercialization of fisheries as a major research topic, and it seems clear that the cooperative research resulting has now produced some significant breakthroughs.

¹⁸ Fridriksson and Vésteinsson (2003).

¹⁹ Dennis *et al.* (1993).

²⁰ Amorosi *et al.* (1996); Amundsen *et al.* (2003); Barrett *et al.* (1997; 1999); Bigelow (1984; 1985); Cérron-Carrasco (1994); Church *et al.* (2005); Dockrill *et al.* (2001); Edvardsson *et al.* (2004); Enghoff (2003); Jones (1991); Nicholson (1998); Ogilvie (1996); Rackham (1996); Simpson *et al.* (2000).

²¹ McGovern (2004).

The Icelandic sites and contexts

Marine fish and sea mammal bones have been found in ninth-eleventh century archaeofauna over ten km from the sea in southwestern Iceland (Reykholt, Háls),²² in Aðalból and Hakonarstaðir in the eastern interior,²³ and in Granastaðir in northern Iceland.²⁴ Currently, the greatest concentration of inland sites with marine species present that are datable by tephra and radiocarbon to around the ninth and tenth centuries are in the lake Mývatn region of the north-eastern highlands (50–70 km from the sea, 200–300 m above sea level).

Figure 1 presents a summary of the marine species found in these inland archaeofauna, demonstrating the range of marine mammal, sea-bird bones and bird eggshells,²⁵ and fish remains found on these sites. The common mussel has been recovered from several inland sites, but the individuals are tiny (one cm and smaller) and are probably the result of seaweed collection transported inland, as mussels of this size are regularly contained within the root balls of the *Laminaria* sp. kelp washed on shore in many parts of Iceland.

At present, our earliest archaeofauna from coastal sites actively engaged in marine fishing come from the northwestern peninsula of Iceland (West Fjords), a region now the target of several ongoing research projects.²⁶ The earliest twelfth-thirteenth century context is from the earliest contexts²⁷ at the site of Akurvík, a stratified series of seasonally occupied small ‘booth’ structures with associated midden spreads around them. The upper contexts at Akurvík are radiocarbon dated to the mid-fifteenth century, and eustatic uplift seems to have caused abandonment of this seasonal station before early modern times.²⁸ While this site is not directly contemporary to the earlier ninth-eleventh century collections from inland Iceland, it provides a useful case for comparison, as we can be reasonably certain that it was in fact a

²² Olafsson *et al.* (2005).

²³ McGovern (1982); Amorosi (1996).

²⁴ Einarsson (1994).

²⁵ Identification by Dr. Jane Sidell, University College London.

²⁶ Edvardsson (2005); Edvardsson and McGovern (2005); Krivogorskaya *et al.* (2005a).

²⁷ All based on bone collagen from domestic mammals showing fully terrestrial delta 13C; for detailed discussion of the dating of the Mývatnssveit sites see McGovern *et al.* (2005).

²⁸ Amundsen *et al.* (2005); Krivogorskaya *et al.* (2005b).

specialized seasonally occupied fishing station rather than a year round farm mixing subsistence with market production.

The Lake Mývatn region (*Mývatnssveit*) straddles the Mid-Atlantic rift, and has been volcanically active for thousands of years. Lake Mývatn, a broad shallow lake, has a complex ecology that supports the vast population of chironomid and simuliid flies that provide its name ('midge lake') as well as sticklebacks and arctic charr (*Salvelinus alpinus*). The lake is fed by underground channels, and the major drainage is the river Laxá flowing northwards to the sea approximately 60 km away. The Laxá is a famous brown trout (*Salmo trutta*) stream and in its lower reaches also receives migratory Atlantic salmon (*Salmo salar*), which do not reach the lake area. The whole region has undergone profound environmental change since human settlement in the late ninth century, when the interior deserts were probably at least partially wooded, the wet meadows south of the lake were more extensive, and the low lying valleys probably supported dense stands of birch and willow, now almost entirely cleared. The Mývatnssveit archaeofauna come from five sites (Hofstaðir, Sveigakot, Hrísheimar, Selhagi, Steinbogi) located around the lake, and the Kráká and Laxá rivers that form part of its drainage. The sites are dated by a combination of artefact typology, AMS radio-carbon (currently a total of 39 dates on archaeological contexts), and volcanic tephra. Figure 3 presents the calibrated range distributions for the samples associated with the midden contexts discussed in this paper and for some of the pre-Christian burials.

Hofstaðir was a chieftain's farm in the tenth-early eleventh century and is archaeologically known for its huge long hall (the second largest in Europe after Borg in the Lofoten in Norway) and an associated complex of buildings. The Hofstaðir Viking age archaeofauna (NISP²⁹ = 8,681) is grouped into two phases (AU) by radiocarbon and tephra. The site has remained occupied down to the present. Sveigakot is a small farm that was founded in the late ninth century (basal midden deposits rest directly upon the 'Landnám' Veðivötn tephra now dated 871 +/- 2 by the GISP2 ice core, Gronvold *et al.* 1995, Sveinbjornsdóttir *et al.* 2000). It underwent at least two phases of abandonment and reoccupation (on a steadily declining scale) before being finally abandoned in the late twelfth century, and its major archaeofauna (NISP = 14,513)

²⁹ NISP = Number of Identified Specimens, a count of identified animal bones from archaeological sites. See Grayson (1984).

Marine Fish									
Gadus morhua	Atlantic Cod	1	1	80	372	193	4	51	11
Melanogr aegl.	Haddock			12	231	69	17	11	10
	Ling			1		15		1	
Pollachius virens	Saithe				26	64	9	8	
Brosme brosme	Cusk				3				
Gadidae	Gadid family								
Hippoglossus sp.	fish		20	6	592	318	32	95	3
	Halibut sp.				3				
Selachii sp.	Shark sp.			1					
Anarcharias lupus	Wolf fish				3				
Heterosomata sp.	Flat fish sp.				1				
	Atlantic salmon				3	1	19		
Salmo salar									
Mussels									
Mytilus edulis	Mussel				32	6	13		
Bird Egg Shell									
Uria sp.	Murre or Guillemot				present			present	
Procellariidae sp.	Shearwater sp.	124	48	136	1,656	8,681	2,949	875	1,302
total NISP		0.10	1.61	1.47	6.04	14.95	3.22	19.43	1.84
% Marine									

Fig. 2. Location map of inland sites dating to the ninth-eleventh century with marine species present and the location of the Akurvík fishing station used for comparative purposes.

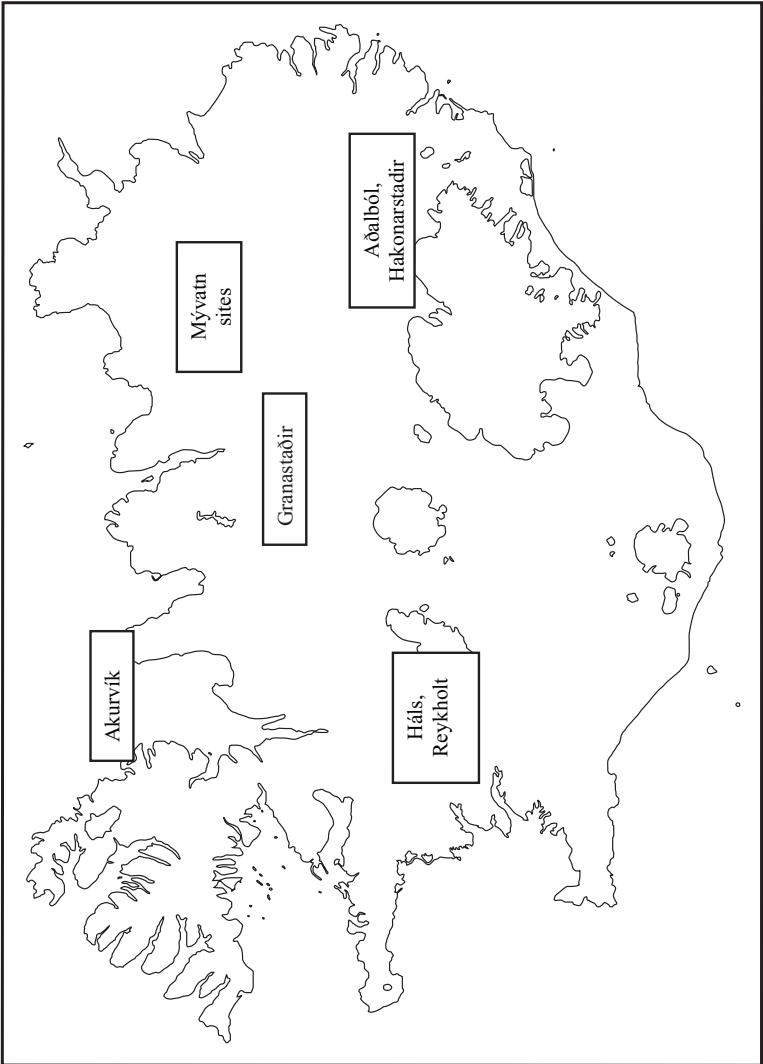
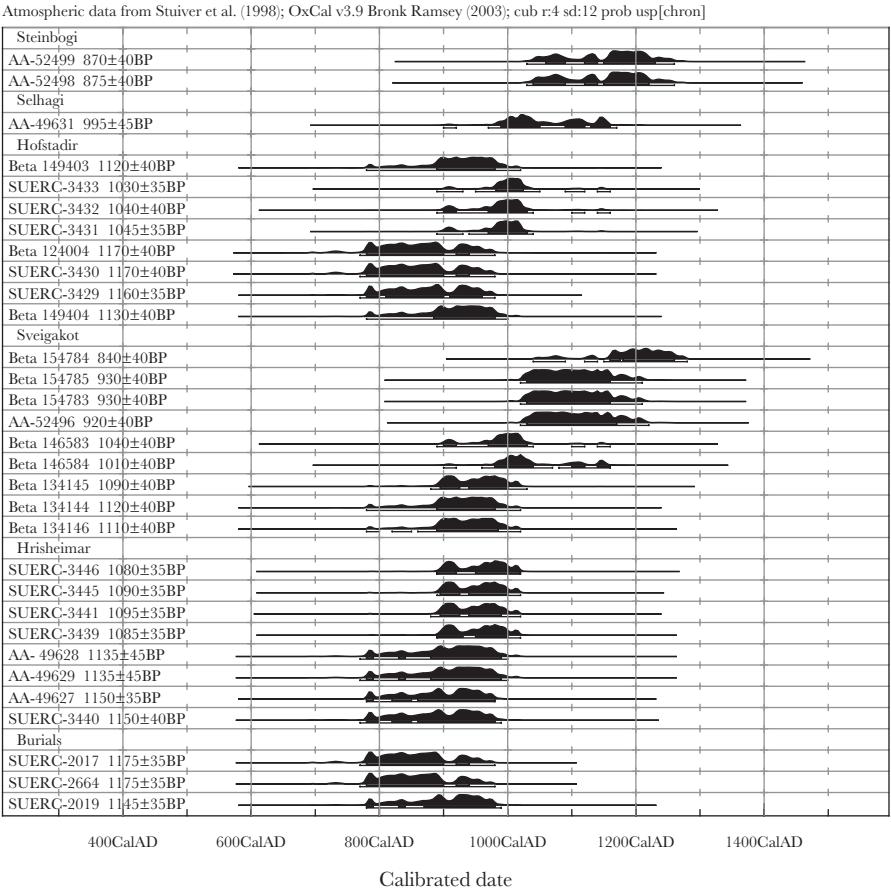


Fig. 3. Mývatn area Calibrated Radiocarbon Dates on midden deposits and burials (fully terrestrial delta C13 only), arranged by site in stratigraphic order. Pre-christian burials make use of horse bones. All contexts dated from Hrisheimar, Sveigakot, Hofstaðir, Steinbogi and Selhagi contained marine fish bones: apparently pre- and post-dating the ca AD 1000 Fish Event Horizon in Britain. OxCal v 3.9 Bronk-Ramsey (2003).



can be grouped into three phases spanning the late ninth to eleventh centuries. Hríðheimur was a substantial site apparently specializing in iron smelting as well as extensive pig keeping.³⁰ Hríðheimar is still under excavation and its very large archaeofauna is thus presented here in a preliminary form (NISP = 2,949) but the site appears to have been settled shortly after the Landnám tephra and was abandoned prior to the fall of the Hekla AD 1104 tephra.

Radiocarbon dates from the contexts reported here consistently cluster in the tenth century (figure 3). Selhagi is a small site on the lakeshore, with a deep midden deposit extending from the ninth to thirteenth c. This archaeofauna is the smallest reported here (NISP = 875) and has been omitted from some comparisons requiring larger sample size. Steinbogi is a small site founded in the tenth century and abandoned by 1300. Its archaeofauna comes from a single phase datable to the early thirteenth c, representing the latest of the Mývatnssveit archaeofauna reported here (NISP = 1,302). The Mývatnssveit archaeofauna thus come from a variety of localities within the highland lake basin and come from sites of varied economic and social status.³¹

Multi-Indicator approach: commercialization signatures

The problems associated with identifying an undocumented pre-commercial, pre-historic, pre-‘fish event horizon’ pattern of fish distribution and exchange are considerable, given that fisher folk traditionally tend to eat their catch as well as market it, blurring the archaeological record. In the past, different indicators have been used to assess probable commercialization in the zooarchaeological record, ranging from simple abundance of fish-bones in an archaeofauna to more sophisticated arguments based on element representation and differential transport of body parts. A multi-indicator approach combining species diversity, skeletal element distribution, size reconstruction, and age assessment is suggested as a productive way forward, and will be employed in this paper.

³⁰ Edvardsson (2005).

³¹ See Perdikaris (1998) for a detailed methodological discussion.

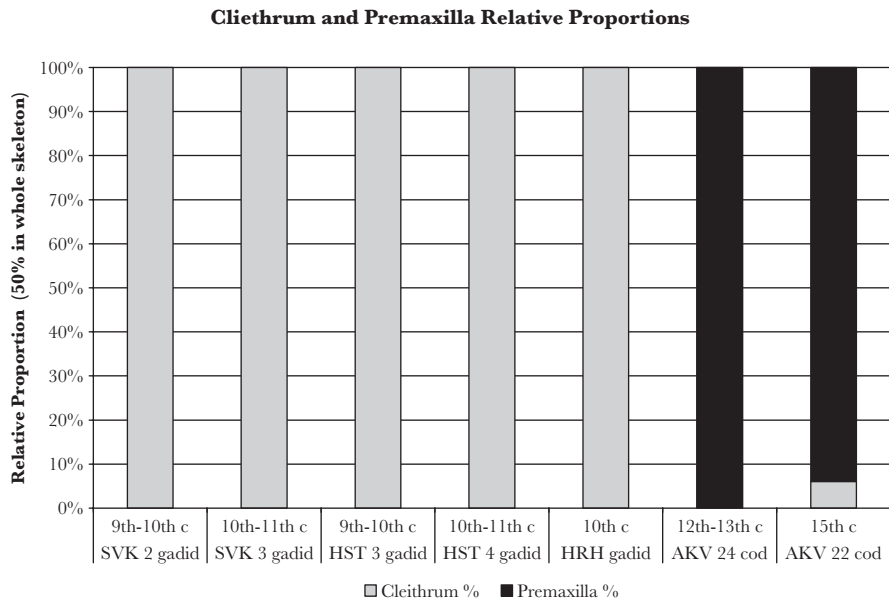
Producers and consumers: selected element distribution

Since fish spoil rapidly, prompt processing has been a key to maintaining seafood quality. Initial butchery tends to take place either at sea or directly upon landing the catch. Fish elements cut away and discarded in preparing fish for consumption or preservation thus tend to accumulate at or near the landing point. From a zooarchaeological standpoint this tends to create a 'producer signature' in the relative abundance of fish skeletal elements excavated. Typically, most of the skull and mouthparts are cut off and discarded at the same time the fish is gutted. Depending on the method of preservation employed, a variable portion of the fish vertebral column is also stripped out and discarded at the processing point. The remaining parts of the skeleton stay with the final product, and may be transported off site to distant consumers. For gadid fish, the crescent shaped cleithrum and associated bones of the pectoral girdle are usually left in the finished product, as these elements help to hold the body together and when spread can help speed drying of the body cavity. Thus a producer site will be disproportionately rich in cranial bones and upper vertebrae, while a consumer site should show a complementary concentration of lower vertebrae and cleithra.

Figure 4 presents the relative abundance of two indicator elements, cleithrum and premaxilla (part of the upper jaw structure), in our Icelandic sample of inland and coastal sites. If only whole fish were present at either coastal or inland sites, the proportions of these paired bone elements would be identical (as each fish has two cleithra and two premaxillae, the graph of a whole skeleton would show an even division of 50 percent each). Both bone elements are of comparable size and durability, both should be comparably subject to the same natural forces of decay and attrition and both can be reliably identified to species level. Thus the relative proportion of these two bone elements should mainly reflect past fish cutting decisions and the effects of differential deposition and transport. It is remarkable that no marine fish jaw parts whatsoever are present in any of the inland Mývatn archaeofauna, and that a clear surplus of mouthparts (or deficit of cleithra) is evident on the coastal producer sites.

Despite such clear patterning, it is somewhat dangerous to base arguments upon only two skeletal elements, and a broader-based approach grouping all the identified fish-bone elements into body areas may provide a stronger basis for comparison. Figure 5 presents a comparison of head and mouthparts, pectoral girdle (cleithrum and associated bones)

Fig. 4. Comparison of the relative proportions of cleithra (bones around the gill slits which tend to travel with preserved fish) and the premaxillae (jaw parts which tend to concentrate on coastal sites). The inland Mývatn area sites (SVK= Sveigakot, HST= Hofstaðir, HRH= Hrísheimar) contrast strongly with the patterning of the coastal seasonal fishing station at Akurvík (AVK). While this graph compares only the larger archaeofauna, it may be noted that no marine fish premaxilla has yet been recovered from *any* inland Icelandic site dating to the ninth-eleventh century. Deposit of whole fish on sites would tend to produce relative proportions close to 50% each.



and the three portions of the vertebral series (thoracic, precaudal, and caudal vertebrae), all normalized for their natural frequency in the gadid skeleton.³² This figure compares both phases at Akurvík with both the inland Mývatnssveit sites (Hofstaðir, Hrísheimar, Sveigakot, Steinbogi) and the inland site of Granastaðir to the east of Mývatn. In this comparison, it is clear that a few bits of fish skull were reaching the inland consumers (all in the back portion of the skull, none from the front end), but the dominance of the pectoral girdle is clear. Also evident is the abundance of caudal (tail) vertebrae relative to upper body vertebrae in the inland site archaeofauna.

³² MAU%. See Grayson (1984) for discussion.

Fig. 5. Relative proportions of major skeletal groups in the fish body, again comparing sites from inland (Sveigakot, Granastaðir, Hofstaðir, Hrisheimar, Steinbogi) with the coastal fishing station at Akurvík. By making use of all identifiable bones of the fish skeleton this analysis avoids some potential sampling problems associated with single-element comparisons, but still provides the same clear-cut distinction between inland consumer and coastal producer sites.

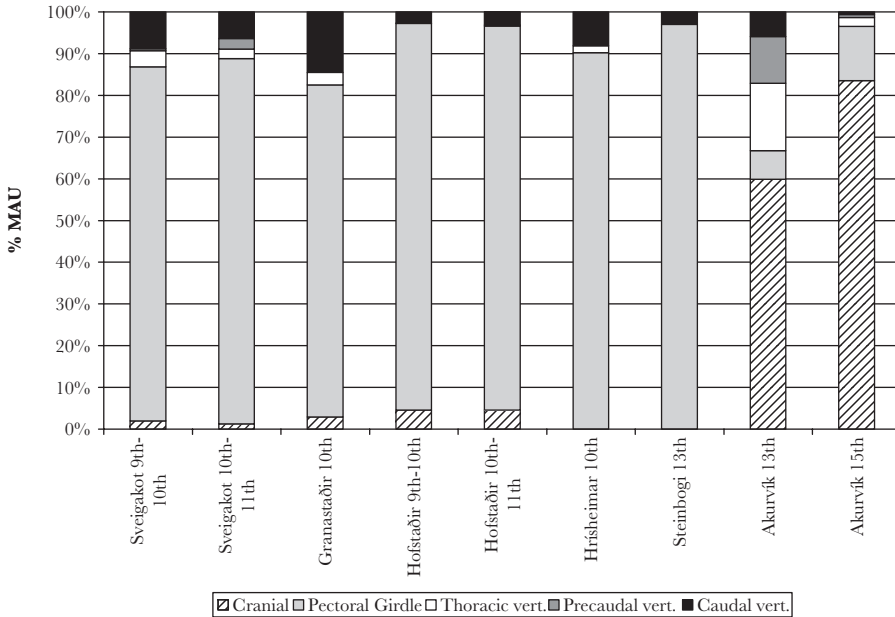
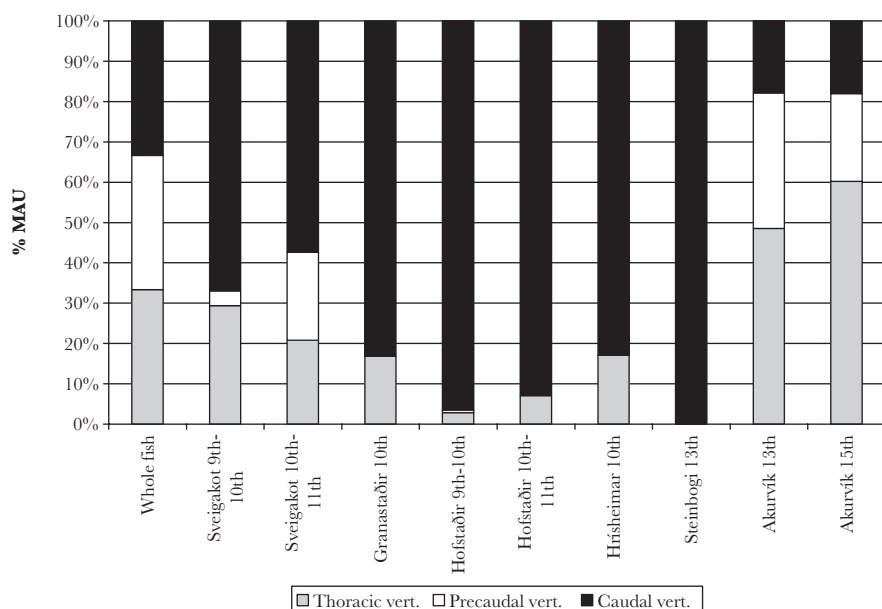


Figure 6 provides a more detailed view by comparing only these vertebral elements for the inland marine fish for the inland Mývatn sites and the two phases of the Akurvík fishing station (again normalized for relative frequency in the skeleton—a whole fish skeleton would have equal proportions of all three vertebral types). The coastal Akurvík vertebral distribution reveals that some fish (smaller individuals) were being deposited whole, with caudal vertebrae intact; these are probably the remains of the fishing crew's meals. However, the coastal fishing station produces a notable surplus of thoracic and precaudal vertebrae, suggesting that the station was producing a product like klipfish as well as stockfish in both twelfth-thirteenth centuries and mid fifteenth century.³³

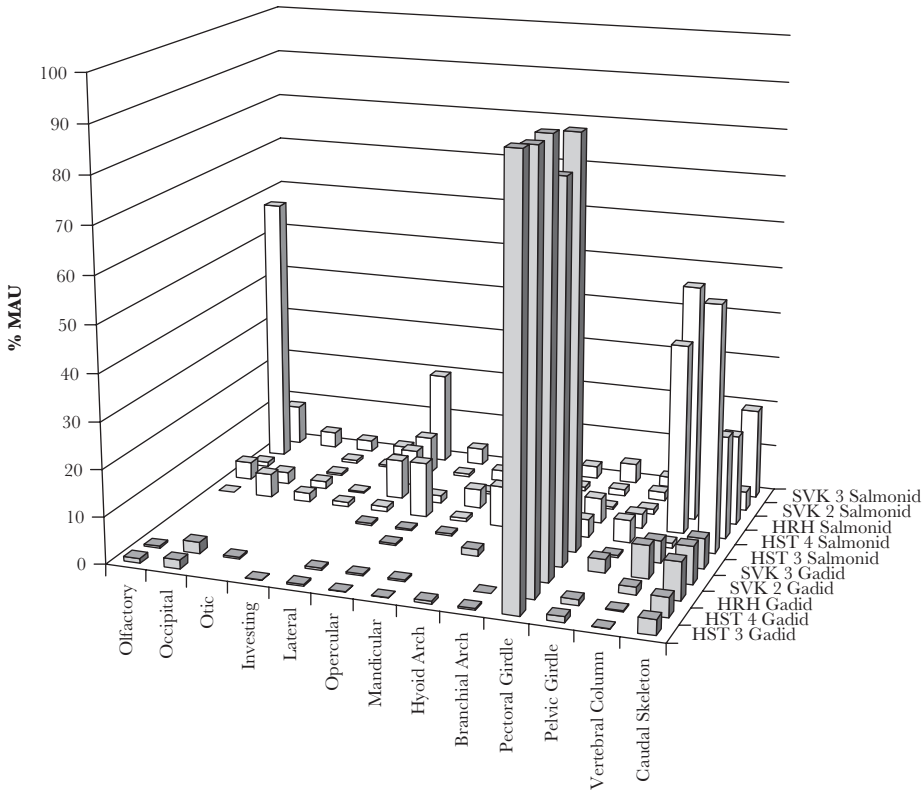
³³ See discussion in Amundsen *et al.* (2005).

Fig. 6. A comparison of the relative abundance of the three types of cod-family fish vertebrae. Thoracic and pre-caudal vertebrae are in the upper body, and caudal vertebrae are in the tail. The distribution in a complete cod fish is illustrated for reference.



It also seems clear that there was some variability in the type of dried fish reaching the different inland farms. While all phases at Hofstaðir, Hrísheimar, Steinbogi and Granastaðir are dominated by caudal vertebrae (typical of a consumption of *klipfisk*), both phases at Sveigakot include a higher relative percentage of thoracic and precaudal vertebrae. This suggests that two of the successive households at Sveigakot were being provisioned with at least some stockfish (which would carry a full set of precaudal and some thoracic vertebrae) as well as the *klipfisk*-like product being consumed on the other inland sites. On all the sites, haddock and cod (the two most common species consumed) seem to be treated identically—prepared mainly as *klipfisk* except at Sveigakot where both appear to have also sometimes been consumed as stockfish. Skeletal element analysis thus has potential not only for identifying producer and consumer site signatures, but also provides evidence for the type of product being distributed. From current evidence it seems that however they were processed, *not one* whole marine fish reaching the Mývatn consumers from the ninth century settlement down to the thirteenth century—all marine fish arrived missing much of their

Fig. 7. Comparison of the major skeletal groups of the fish skeleton for both salmonid family (freshwater fish) and gadid family (marine fish) recovered from Hofstaðir, Sveigakot, and Hrísheimar midden deposits in the inland Mývatn district. While the salmonids are represented by most bones of the skeleton, the marine gadids lack most mouthparts and skull elements.



skeletons. It appears that freshly caught marine fish were not part of this pre-commercial distribution network, but that processed (probably dried) fish were regularly transported inland.

Local versus imported fish

The gadid family fish-bones range from 12 to 60 percent of all identified fish-bones in the five major collections, with the rest being the local freshwater trout and charr. Element frequency analysis again provides a strong contrast in the distribution of specimens that crosscuts period and site.

As Figure 7 indicates, the salmonids (local trout and charr) are represented by virtually all the bones of the complete skeleton, while the marine gadids are represented by partial skeletons in all five Mývatnssveit sites (dating from the late ninth to early thirteenth century). Freshwater fish were being caught locally and processed on site, with butchery waste and food consumption waste winding up in the same midden deposits. This salmonid fish pattern in fact resembles the element distribution pattern of the domestic mammals (cattle, pig, sheep, and goats), which also reflect local slaughter, butchery and consumption patterns blending together in a common midden dump. While these large freshwater fish-bone collections have great potential for local environmental reconstruction,³⁴ their major significance for this paper is to demonstrate the contrast of skeletal element distribution between locally caught fish consumed fresh, and fish imported as partial skeletons.

Artisanal versus commercial species diversity

Figure 8 presents the mix of major species present in large archaeofauna from both northern Norway (Lofoten and Vesterålen) and Iceland. The two Iron Age sites of Bleik and Toften are dominated by fish, but show a high diversity in species landed and processed. The two phases of the nearby Storvågan site (a centre of the documented medieval commercial trade) shows a marked reduction in species diversity and a strong concentration on the Atlantic cod that provided the exportable product. In Iceland, the Viking age interior sites (Granastaðir as well as the Mývatnssveit sites) show a high diversity of species, with haddock bones outnumbering cod on some sites. The contrast with the twelfth-thirteenth century and fifteenth century archaeofauna from the seasonal fishing station at Akurvík is striking, and again indicates a concentration of cod. We thus have reason to suspect that the Nordic consumers of the pre-twelfth century, pre-commercial marine fishery were tolerant of a wide range species circulating as preserved fish. Mono-specific targeting of Atlantic cod seems to be a phenomenon of the process of product standardization and commoditization.

³⁴ Lawson *et al.* (2005).

Fig. 8. Comparison of major identified fish taxa from sites in northern Norway and Iceland. Bleik and Toften in Norway date to the pre-Viking Iron Age, while the two phases from Storvågan date to the period of historically documented cod-dominated commercial fisheries. The ninth to thirteenth-century Icelandic sites show a comparably wide range of species brought inland, while the coastal fishing station at Akurvík is also dominated by cod in both major occupational phases. Reduced species diversity appears to be a critical archaeological indicator of high medieval commercial fishing.

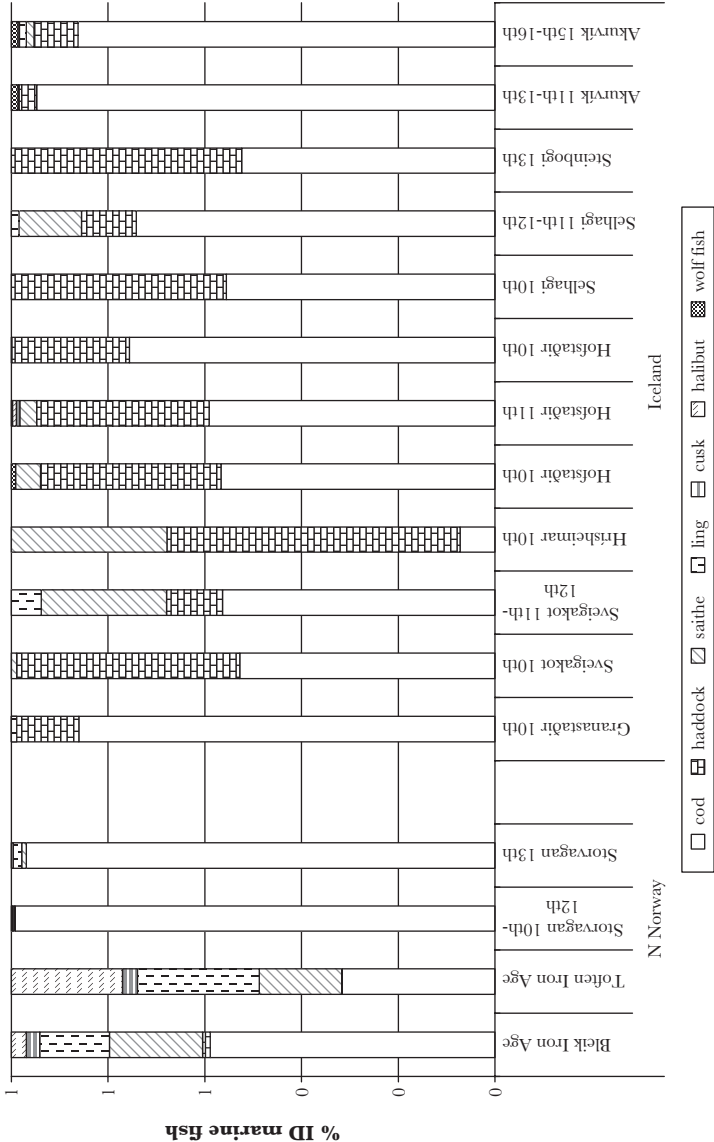
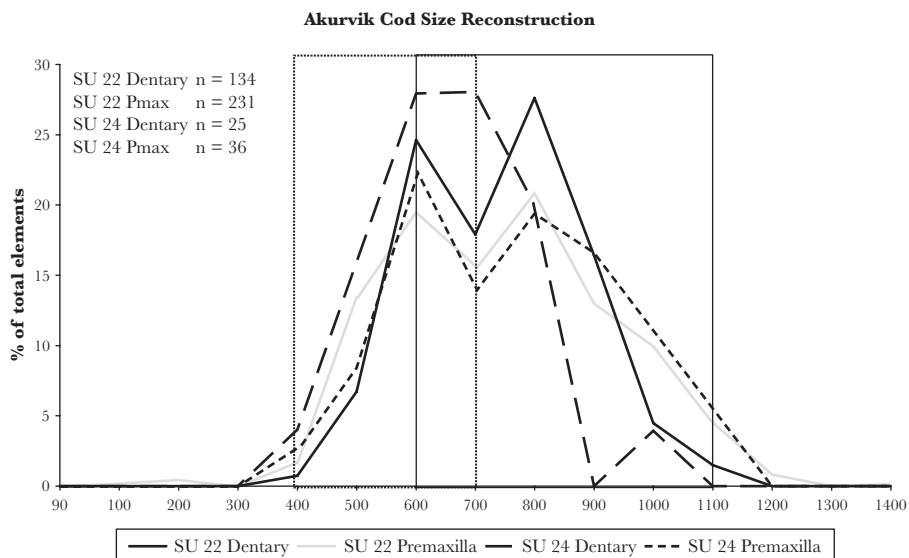


Fig. 9. A reconstruction of the live length (mm) using the dentary and premaxillary bones of cod fish from the coastal fishing station of Akurvík for its two major occupational periods (SU 24 = 11th–13th c, SU 22 = mid 15th c). The two bones provide closely similar distribution patterns, and the generally bimodal distribution peaks fall within the centers of the optimal stockfish size range (600–1100 mm) and the optimal *klipfisk* range (700–400 mm). Two different preserved fish products appear to have been produced at the same fishing station in both time periods.



Live length reconstruction

Fish size reconstruction is a critical element in a discussion of fisheries commercialization. Not all sizes of fish are suitable for curing. For the commercial stockfish, the modern industry has defined its standard to a fish 60–110 cm in live length. This allows for plenty of flesh after the drying is complete but the fish is not too oversized, so that spoiling does not occur prior to drying. *Klipfisk* traditionally uses smaller sized fish better able to dry split open, and under a wider range of temperatures.

The regression formulae of Wheeler and Jones provide widely used approaches to the reconstruction of live length from cod skeletal elements (particularly the dentary and premaxilla).³⁵ While these measur-

³⁵ Wheeler and Jones (1989).

able jaw elements are totally absent in our inland consumer sites, they are extremely abundant in the coastal sites of the West Fjords. Figure 9 presents the distribution of reconstructed cod length at Akurvík in the twelfth-thirteenth century contexts (SU 24) and the mid fifteenth century contexts (SU 22). The solid box encloses the approximate 'stockfish window' while the dotted box encloses the range for optimal *klipfisk* production. It would appear that by the later Middle Ages, this seasonal fishing station was producing both products, perhaps for both a local intra-Icelandic market and for overseas export (as suggested by the element distribution analyses presented in figures 5 and 6).

Age reconstruction—and fish population change

As with size reconstruction, determining the age of fish from archaeological assemblages can provide a key baseline for analysis of both fishing patterns and the nature of the fish stocks being taken. Gadid fish-bones have proven to be a challenge in locating and counting incremental growth lines comparable to enamel/dentine annuli in mammal teeth. The modern fisheries industry uses the otolith (ear stone) for incremental analysis of growth and seasonality but otoliths are nearly pure calcium carbonate, and disappear completely under depositional environments that preserve virtually all other skeletal elements in excellent condition. Where otoliths survive, they are usually in statistically insignificant numbers.

Research and testing at the Brooklyn Zooarchaeology Laboratory indicates that the clearest and easiest way to collect reliable age data for individual codfish is by counting the incremental growth rings on the face of the centrum of the atlas vertebra— an element which preserves well and is regularly deposited at producer sites. Coupled by a regression formula developed by Inge Enghoff, both size and age data can be collected for the same archaeological individual.³⁶ At Akurvík, current work indicates that for codfish within the 60–110 cm 'stockfish window' the age range falls between 6 and 12.5 years of age. Today these would be fairly old cod for this size, at least by modern industry standards.

Based on data published in *Annales Biologiques* the modern age range of *Gadus morhua* landed in the North Atlantic in this size range is between two and ten years of age.³⁷ In the current sample, 73.2 percent

³⁶ Inge Enghoff (1994).

³⁷ Parrish (1982; 1983; 1984).

of the modern fish fall between four and five years, while in the archaeological material, 65 percent of the fish fall between eight and ten years for the stockfish range. While the size comparisons do not point to a great difference in fish length, the mode of the age of the cod population was practically cut in half from the Akurvík times to the modern era as the most represented age class dropped from nine to ten years to five years.

It would appear that the rate of growth of twentieth century cod has been significantly more rapid than in medieval times, probably due to depletion of larger and older individuals by fishing. This age/size difference is quite significant to the spawning cod population, since a 10 year-old fish may lay many millions more eggs than a 4–5 year-old of the same body size.³⁸ The relevance of zooarchaeological ‘paleofisheries’ data to current efforts to sustainably manage cod stocks and other marine resources can only increase, as ancient biomolecular evidence and isotopic analyses are added to a growing suite of technical advances applied to a growing body of excavated evidence across the North Atlantic.

Human and animal isotopes and dietary reconstruction

Radiocarbon dates are affected by the amount of (older) marine carbon ingested in life, and thus the detection of a marine carbon reservoir effect is of considerable importance for chronology as well as dietary reconstruction.³⁹ Stable carbon and nitrogen isotope ratios in human and animal bone are increasingly being used to reconstruct past diets. In the North Atlantic, the carbon isotope ratio in human or animal bone has been used to assess the degree of participation in the marine food web.⁴⁰ A recent series of radiocarbon dates and carbon and nitrogen assays have been carried out by Dr. Gordon Cook of the Scottish Universities Reactors Centre on a steadily expanding number of pre-Christian burials from many districts of Iceland. Since many of these pagan graves contained the bones of horses (and sometimes dogs) as well as humans, it is possible to provide a comparison between herbivores eating terrestrial plants and omnivores potentially consuming both marine and terrestrial food.

³⁸ See Perdikaris (1998) for more extensive discussion.

³⁹ Ascough *et al.* (2004).

⁴⁰ See discussion in Arneborg *et al.* (1999); Barrett *et al.* (2001).

Figure 10 graphs the carbon and nitrogen isotopic data from horse, human, and dog bones from pagan graves in the inland Mývatn district (close to the farm sites whose archaeofauna are discussed here). Arneborg and her colleagues suggest for population groups from high northern latitudes that a $\delta^{13}\text{C}$ end member of around -21.0‰ would be appropriate for 100 percent terrestrial diets while -12.5‰ would represent the end member for 100 percent marine diets.⁴¹ By this standard, the horses all show completely terrestrial carbon signatures, while the dogs and the humans appear to show some admixture of marine carbon. However, the probable consumption of substantial amounts of freshwater fish suggested by the zooarchaeological collections may present complications. Detailed information on the effect of freshwater fish consumption on human bone collagen $\delta^{13}\text{C}$ values is not well documented, but Cook and his colleagues have demonstrated a similar range of $\delta^{13}\text{C}$ values (-18.2 to -19.5‰) for consumption of significant freshwater resources at *Schela Cladovei* in the Iron Gates Gorge of the River Danube during the Mesolithic era.⁴² However, these small shifts in $\delta^{13}\text{C}$ were accompanied by significantly greater shifts in $\delta^{15}\text{N}$ (range = $+13.2$ to $+15.3\text{‰}$ cf. approximately $+8\text{‰}$ for a totally terrestrial diet). The Mývatnssveit human and dog $\delta^{15}\text{N}$ values were lower in range ($+7.7$ to $+10.0\text{‰}$), suggesting that a freshwater fish effect is not the whole explanation for the contrasting carbon ratios between horses, humans, and dogs. Additional analyses directly comparing isotopic ratios in marine and freshwater fish bones and terrestrial mammal bones from the Mývatn sites are now underway, and a fuller understanding of the isotopic patterning of these early inland burials should soon be possible.

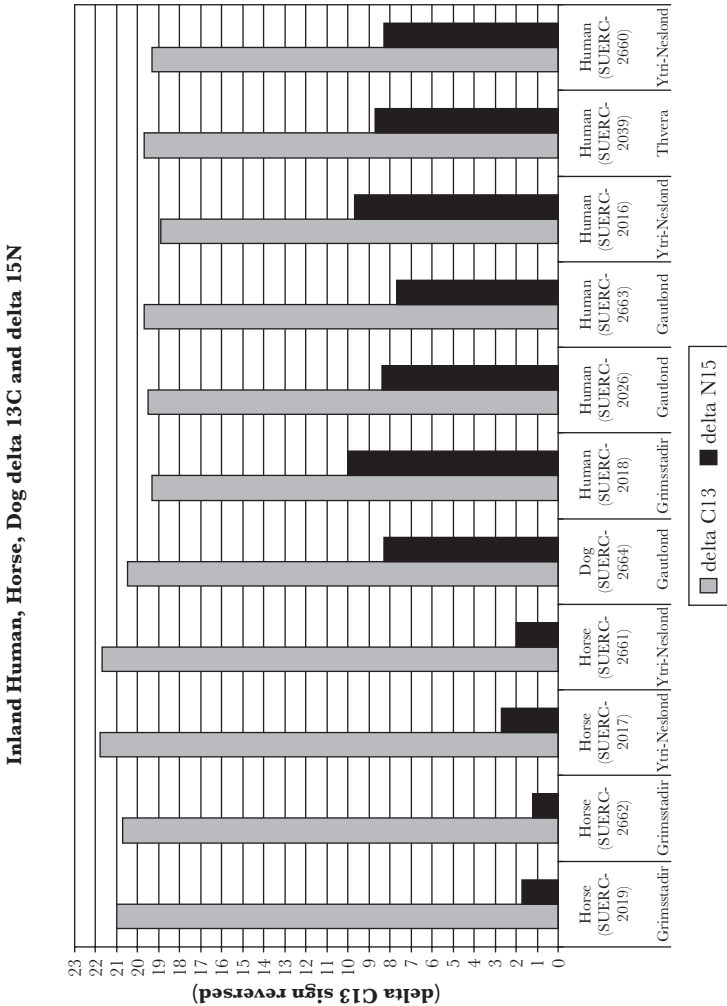
Between subsistence and globalization: outlines of Nordic maritime economy prior to AD 1000

Thanks to sustained scholarly co-operative efforts, we are beginning to see an outline of the undocumented pre-fish event horizon, pre-Hanseatic Nordic maritime economy. We now recognize that the source of the fish preservation skills that revolutionized northwestern

⁴¹ Arneborg *et al.* (1999).

⁴² Cook *et al.* (2002).

Fig. 10. The stable carbon and nitrogen isotope levels for horse, dog and human bones from inland Mývatn sites. The radio-carbon dates based on the horse bones indicate late ninth to early tenth-century burial. The contrast between entirely terrestrial horse carbon ratios and the slightly marine human and dog ratios suggest some consumption of seafood even by these Viking age inland lake dwellers. Note the sign of the delta C13 assays has been reversed to allow for more readable graphing against the N15 figures.



European fisheries in the eleventh-twelfth century must be sought in the Scandinavian world of the early Viking age. When the highlands of Iceland were settled soon after 871, Nordic farmers of all classes thought it vital and found it practical to provision their households with dried fish from the distant sea. These Scandinavian settlers of inland Iceland were quite able to secure a steady supply of preserved fish before, during, and after the British fish event horizon.

We do not yet fully understand the role of dried fish in the early Icelandic seasonal round, but a source of high quality protein that could be relied upon in late winter would certainly be attractive. Clearly, dried marine fish was seen as important enough to secure in quantities large enough to regularly appear in refuse deposits and to affect the isotopic make up of inland-buried human and dog bones. We also do not yet understand the social mechanisms that regularly transported dried fish products (apparently mainly *klipfisk* but with some stockfish mixed in) so far inland. Webs of gift-exchange, labour exchange, chieftain accumulation and redistribution, annual journeys from inland to coast, or purchase at regional market fairs are all plausible means of moving coastal products inland, and the ethnographic record of early modern Iceland suggests multiple pathways might have co-existed at the same time.

We also do not yet know if the different elements of the marine products transferred inland were socially and seasonally integrated, or if dried fish were marketed separately from sea mammal meat, sea-bird carcasses or sea-bird eggs. There is some suggestion of fairly swift and direct connections between inland farms and the coast to move perishables like porpoise meat, seaweed, or marine bird eggs. This might argue for direct travel by inland people to the coast in spring or early summer (when eggs could be collected and migratory sea-birds would be present). However, the production of stockfish is a winter activity, and both stockfish and *klipfisk* take months to prepare, making both products unlikely to be created by inland householders making a short trip to the coast. This may explain the total absence of whole, recently caught marine fish from the inland sites in Iceland.

Both stockfish and *klipfisk* are light and easy to move in bulk, and in historic times were regularly transported inland on packhorses. The early date for the deposition of the first processed fish (directly upon the Landnám tephra layer at Sveigakot) underlines that the coastal connection was established very early in the settlement process. It did

not emerge as a result of increasing population and developing market exchange late in the settlement age but was part of the very early Viking age subsistence package. We must model some sort of distribution system in the context of the first stages of chieftain-dominated settlement which cross-cut what were to become different localities and communities (*hreppar*), as Mývatn is separated from the sea by two later hreppar boundaries. In north Norway, elites were closely involved in the movement of bulk stockfish by ship, and Edvardsson has argued for substantial inter-regional movement of fish from the West Fjords into other parts of Iceland in the Viking age.⁴³

While more research is needed, it appears certain that there was some sort of organized fishery and preserved fish distribution system in place in ninth-tenth century Iceland that successfully moved substantial amounts of fish and other marine products inland. This system must have been imported from mainland Scandinavia rather than the northern British Isles, and almost certainly draws upon prehistoric roots in north Norway. In scale, it appears to have been a system somewhere between a household-level effort and the proto-world system network of the Hanseatic traders. Tolerant of high species diversity, variable in fish cutting standards, and certainly smaller in scale, this pre-commercial, un-monetized Scandinavian Viking age seafood distribution system never the less appears to be the direct ancestor of the modern commercial fisheries in Northwest Europe.

For some time this early Nordic seafood production and distribution system seems to have remained just a northern ethnic specialty rather than an economic revolution. As Barrett and his colleagues have argued, this early Viking age Nordic seafood processing and distribution system did not immediately trigger the expanded trade to non-Scandinavian Britain immediately following the initial Norse settlement of the Northern and Western isles in the ninth century.⁴⁴ In Britain, a gap of 100–150 years separates the initial Viking age settlements in the north (with their isotopic evidence for increased human seafood consumption and increase in frequency of large gadid bones) from the archaeologically visible fish event horizon of c. 950–1050 in inland sites to the south. The fish event horizon thus coincides instead with the ‘second Viking age’ Sawyer characterized both by intensified warfare and

⁴³ Edvardsson (2005).

⁴⁴ Barrett *et al.* (2004; this volume).

increasing interaction of Scandinavians and Anglo-Saxons at all social levels in England.⁴⁵ During this period, the potential of dried fish as a commodity and its potential for feeding armies, provisioning towns, and raising money may have been widely demonstrated. As Scandinavian elites became increasingly Christian, managers of towns and manors rather than heathen raiders, varied aspects of Nordic culture from language to art became integrated with the larger societies of Christian Europe. The short-lived Anglo-Scandinavian dynasty briefly uniting English and Scandinavian thrones, founded 1014 by Sven Forkbeard and expanded by his more famous son Knut 'the great' (died 1039), may be one candidate for the mechanism for the Nordic contribution to the fish event horizon, but other possibilities need investigation as well. However the technology transfer may have taken place, the long-term consequences of the pre-commercial Norse fish distribution network 'going global' were profound. The commonplace expertise of Nordic fisher-folk and Nordic chieftains in making and marketing dried fish, though an unworthy subject for sagas, may well be one of the most lasting legacies of the Viking age.

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⁴⁵ Sawyer (1997).

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CHAPTER THREE

UNDERSTANDING A MEDIEVAL FISHING SETTLEMENT ALONG THE SOUTHERN NORTH SEA: WALRAVERSIJDE, C. 1200–1630

Dries Tys and Marnix Pieters

Introduction

Nearly fifteen years of systematic archaeological research at Walraversijde, a deserted late medieval fishing village situated on the Flemish coast next to Ostend, has been carried out concomitantly with a large-scale analysis of the landscape and its available written sources. This combination provides a huge database without comparison for the study of late medieval and early modern fishing communities in the southern part of the North Sea area. The contribution in this volume focuses on the evolution of this settlement from a probable seasonal fishing settlement in the twelfth or thirteenth centuries to a permanent (fourteenth century) and flourishing fishing village (fifteenth century), which was finally deserted in the late sixteenth to early seventeenth centuries.

Large-scale excavations started in April 1992, which anticipated infrastructural works and documented an unknown wealth of information relating to the fifteenth and early sixteenth centuries fishing settlement.¹ As a result of a lucky coincidence between the province of West Flanders developing the area for recreational purposes and the wealth of available archaeological and historical information related to Walraversijde, ‘Walraversijde 1465’ was realised, an evocation of the lost fishing settlement in its heyday in the middle of the fifteenth century. The project combines a physical full-size reconstruction of four buildings of the settlement, an excavation reconstruction and a site museum.² ‘Walraversijde 1465’ has been open to the public since 24 June 2000, the

¹ De Paepe and Pieters (1995); Ervynck *et al.* (2004); Pieters (1993; 1994; 1995; 1997; 2002a; 2002b; 2005); Pieters *et al.* (1995; 1999; 2002); Schietecatte (2003); Van Neer and Ervynck (1994); Van Neer and Pieters (1997).

² Kightly *et al.* (2002; 2003).

Feast of St. John the Baptist, patron saint of Walraversijde's fishermen and has welcomed more than 100,000 visitors in five years of operation.

This contribution is based on information obtained through a combination of different approaches such as archaeology, dendrochronology, numismatics, soil science, quaternary geology, archaeobotany, archaeozoology, toponymy, analysis of written sources, retrogressive reconstruction, landscape research and analysis of the socio-political context. An attempt is made to present a synthesis of the available information. As it is not possible in the framework of this contribution to present everything at the same level of detail, an extensive bibliography on the research related to Walraversijde is included.

*The start of medieval fisheries in coastal Flanders in the
context of the count's power*

Historical sources from the twelfth to the early fourteenth centuries reveal the existence of a multitude of fishermen's settlements along side the coast of the former county of Flanders. We know of the existence of at least 37 smaller and greater ports and fishermen's settlements between the former part of Flanders in northern France and Zeeuws Vlaanderen.³ Yet, this does not show the diversity and hierarchy in the group of coastal settlements. As H. Fox suggested, we can indeed 'divide' coastal settlements into major ports (for instance, Calais and Ostend), minor ports (like for instance Mardyck, Blankenberge), fishing villages (like Heist), fishing sites with no (permanent) inhabited buildings, and 'all the gradations in between' shading into one another.⁴

The larger towns and ports had important fleets, market accommodations and a certain political role in late-medieval Flanders. The 'ordinary' fishing settlements at the bottom of the hierarchy, with names like *Blutsyde* or *Slepeldamme*, with no traces in the actual landscape but a place name, seem much more difficult to understand.⁵ Settlements

³ Degryse (1939; 1944); Degryse and Mus (1967) 89; Loppens (1936; 1937; 1938).

⁴ Fox (2001).

⁵ In 1401, the aldermen of the 'Brugse Vrije' make enquiries on dune roads to the fishermen who live in several (unknown) mooringplaces nearby ('de visschers die wonen up te yden van der zee die ghaen bi daghe ende bi nachte due de vorseide dunen upt vloedeninc te hare scepen om te vaerne ter zee, ende voort van andren vrijlaten die omtrent de vorseide dunen gheseten zijn.') Algemeen Rijksarchief (ARA) Brussels, Archieven van de Rekenkamer, accounts of the aldermen of the 'Brugse Vrije', no. 42525: 4 January 1401–20 December 1401: f.53r.

referred to as (*h*)*yde* (related to the Old English *hyth*) or small mooring places in natural tidal inlets could not always be related to the institutional organisation of the landscape and at least half of them were never an independent parish. Are these settlements similar to the temporary fishing bases in the vicinity of the rural coastal settlements in late medieval England and to be understood as a kind of fishermen's camp, as temporary living spaces near the resources at sea?⁶

Walraversijde seems to have started as a similar mooring place (named after a certain *Walraf*).⁷ The place appears for the first time in a written document from 1290 (AD), when the fishermen of Walraversijde were said to be indebted to a salesman called *Jakemon Smerl* living in the city of Ypres.⁸ The topographical context of the mooring place or *hyth* named after the unknown *Walraf* indicates however a possibly older origin, since it was situated near a small tidal channel in an estate of the count of Flanders from the tenth to the eleventh centuries, which is not without consequence.⁹

The Flemish fishery witnessed its heyday already in the second half of the twelfth and thirteenth centuries, as shown by several historical data studied by R. Degryse. For instance, at the end of the thirteenth century, the fishing fleet of Blankenberge had more than 60 ships (while Calais had 30 ships around the same time).¹⁰ The rising group of urban consumers in the high medieval urban centres like Ghent and Bruges was probably the main incentive for the development and intensification of the Flemish seafishery, and consequently the dense pattern of coastal settlements.¹¹ Archaeological and archaeozoological research in Ghent and Tournai has shown that the 'rise of frequency of herring on the inland markets' started in the early eleventh century.¹² According to historical sources, it seems that during the eleventh and twelfth centuries the supply of sea-fish was at least partly organised from within the large comital estates in coastal Flanders. There are indeed several

⁶ Fox (2001); Gardiner (2001); Kowaleski (2003).

⁷ Tys (1997).

⁸ Wyffels (1991) no. 5204: 'les poisonniers de Wiltravenszeide'.

⁹ Degryse and Mus (1967); Degryse (1987); Tys (2004).

¹⁰ Degryse (1939) 186–190. From at least the middle of the thirteenth century, fleets existed out of a quantity of smaller, open fishing ships called *buza* or *slabbert*, and larger herring ships called *korfschepen*, as is shown by the adjusted market tolls form Nieuwpoort from 1247. Degryse and Mus (1967) 85, n. 2 and 91, n. 1; Gilliodts van Severen (1901) 158, no. X.

¹¹ Degryse (1939) 195–196; Eryvynck *et al.* (2004).

¹² Eryvynck *et al.* (2004) 233.

indications that also sea-fish belonged to the market oriented 'produce' out of these coastal comital estates.¹³ Herring fishers around Veurne are mentioned in the oldest known general account of the revenues of the comital territorial estates dating from 1187, which reflects on an estate-situation of the eleventh century.¹⁴

Herring are also mentioned as revenues from the (large) comital estates in the areas around Bruges, Saint-Omer and Bergues, especially the remarkable revenues of the comital estates near Mardyck (no less than 130,000 herring).¹⁵ Herring (also eels and flatfish) were also listed in these accounts in relation to several amounts of salt¹⁶ and peat that was used to produce salt (through peat burning).¹⁷ These data show that herring were caught on a larger than local scale exceeding the level of self-subsistence of the rural communities. Furthermore, they show that these communities were not only involved in fishing, but in several aspects of the 'chaîne opératoire' of fish processing, probably including salt production. This does not mean necessarily that we are already dealing with specialised fishing communities, since it may well have been a part-time temporary activity of the people living on the comital estates that were leased out from the end of the eleventh century. This image of comital coastal fisheries reflects the social and political context of fisheries elsewhere in Europe between the 9th and twelfth centuries. During this period fisheries became important economic and feudal resources, owned by large landowners and powerful central authorities.¹⁸

¹³ Thoen (2004); Tys (2004).

¹⁴ Verhulst and Gysseling (1962) 179–181. Some *piscatori de haringa* delivered certain amounts of herring (20.000) and of flatfish (750), to the count's officials, which were listed under the revenues of the comital *lardarium* and *spicarium* of Veurne. See also Tys (2004).

¹⁵ Verhulst and Gysseling (1962) 151, 152, 181, 181, 189. These amounts are also to be considered as a rent in kind and are therefore merely a reflection of the total amount caught by the fisherman of the coastal estates.

¹⁶ For instance: in the *lardarium* estates of Bruges 220 *bardeling* (amounts) of salt (*salis*). Verhulst and Gysseling (1962) 151–152.

¹⁷ In the *lardarium* of Bruges: 600 *kasse* (amount of peat). Verhulst and Gysseling (1962) 37, 74, 151–152. On medieval salt production see Leenders (1999).

¹⁸ De Boer (1997); Squatriti (1998) 105–112. See also Darby (1983) 23–24 on the royal eleventh century eel-fisheries at Wisbech in The Fens (33.000 eels caught in 1086).

The sea-fish caught by the part-time comital fishermen were brought in exchange networks, to be sold in the early urban centres.¹⁹ In this respect, it is remarkable that the oldest markets in cities like Ghent and Antwerp were fish markets.²⁰ These fish markets date probably from the tenth and early eleventh centuries, and were related to the comital castles that during this period played an important role in the formation and development of these cities.²¹ These castles were also the depots where the domanial produce from the comital manors and estates was stored and sold on the town markets, leading to an important interactivity between castle and trade settlement. Fish was apparently one of the obvious and important products from the comital estates to be sold on the castral (fish) markets, which explains the early frequent appearance of herring in Ghent.

This origin of the development of sea fishing out of the comital domanial system explains also the mid-twelfth century position of comital towns like Nieuwpoort and Grevelingen as coastal fish markets. Both towns were comital creations on comital terrains (the dunes were entirely comital property), where fish was collected and where, from the middle of the twelfth century, the counts' officials collected tolls on the traded sea fish.²² The fish that was brought to these centres came most probably from the domanial fisheries. The actual eleventh and twelfth century fishermen's settlements that correspond with these fisheries are not well known, apart from some fishing ports, as Mardyck, sometimes with early medieval antecedents, like Wissant. Several places between the rivers Aa and Yzer that had to pay herring tythes at the end of the twelfth century may go back to domanial fisheries, while several of the known late medieval fisheries in the castellany of Bruges may also have antecedents in older comital estate fisheries.²³

This could well have been the case for Walraversijde, since it originated topographically in a comital estate (from the tenth century), next to a natural tidal inlet. It is therefore not impossible that Walraversijde

¹⁹ Squatriti (1998) 113. See also Hoffmann (2000) who sees part-time specialist servitors of feudal fisheries as the first step in the development of commercial fishing.

²⁰ Verhulst (1999) 78 and 100.

²¹ Verhulst (1999) 100.

²² Degryse (1939) 193. Both centres replaced the older domanial system, where the domanial produce, including sea-fish, eels, etc. was brought to the castral storehouses in the comital centres of Bruges, Veurne, etc.

²³ Degryse (1939) 191.

had an origin as a temporary fishing base in the context of this comital estate, after which it evolved to a fishing settlement of a more permanent nature.²⁴

The development of Walraversijde in relation to the subsistence crisis of the fourteenth century

The first and best-known archaeological settlement at Walraversijde, near the tidal inlet, was situated north-west of the fifteenth century village. The remains of the settlement next to the tidal inlet were still visible on the actual beach (figure 1) until the construction of breakwaters in the late 1970s. The breakwaters trapped important volumes of sand that acted as a protective cover for the settlement remains. Our knowledge of the built environment of the village depends on the occasional archaeological observations of the remains of this village at the beach; in 1936, for instance, when the bases of several houses were uncovered accidentally by the sea.²⁵ According to these observations, the remains of the settlement consisted of house platforms and peat extraction pits, which contained a number of mobile archaeological remains such as Rhineland stoneware, Scarborough ware, lead weights, shells from marine molluscs, walnut and hazelnut shells, and pilgrims' badges, to name a few, together with small amounts of Rhineland pottery going back to the eleventh century.²⁶

The houses of the thirteenth and fourteenth century phase of the village were organised in small, dispersed groups, although alignments were also observed. The largest house measured 12 m by 7 m. The walls were in wattle and daub with stakes in the corners, the doorstep was made from brick or stone and in the centre was a brick hearth plate measuring 1 m 30 by 1 m 30. The roofs were certainly thatched as the numerous remains of thatch suggested. There were also some rectangular sheds that could, according to the local researchers, be identified as stables, due to the absence of hearths. Such structures can also be interpreted as storage sheds, or maybe even as boathouses, as observed across the Channel in Devonshire. Written sources tell us that the inhabitants of

²⁴ Tys (1996; 1997).

²⁵ According to Chocqueel (1950) 3 houses could be dated to 1334.

²⁶ Rutot (1902–1903); Loppens (1932); Chocqueel (1950); Vanneste and Ingelaere (1959); Cools (1988).

Fig. 1. House remains of the thirteenth/fourteenth century settlement observed at the beach of Raversijde by A. Chocqueel.



Walraversijde were already clearly involved in sea-fishing, trade in salted fish and other goods, and in occasional piracy.²⁷ They were probably also involved in peat digging for salt production.

During the first half of the fourteenth century, the settlement extended eastward from the tidal inlet to the area of a former estate of Saint Peter's abbey of Ghent (a former comital gift). In this period, the agricultural society of coastal Flanders was in a structural crisis. In the context of the rising commercialisation and intensification of agriculture in the coastal area in the twelfth and thirteenth centuries, the products from peasants and leaseholders were directly oriented towards the urban markets of specialised products (meat, milk products, cereals, peat, leather, plant dyes). Farms became entirely dependent on the market, and evolved into what could be described as commercial survival farms.²⁸ These individual holdings were vulnerable to the rising exploitation costs in

²⁷ 'Pierre Goorlin, Piere Heckaerd, Jan Hallinc, de Neufport, Ernoul Weytin de Wilravenshyde, pesceurs de Flandres, les quels de naguaires prinrent sur la mer un craeyee de Middelborch', Archives Départementales du Nord (ADN), B 5628, Compte pour Jehan Sangui de la Chapelle Souverain Baillu de Flandres, 16 September 1387–13 January 1388.

²⁸ Thoen (2001; 2004); Soens (2001).

the thirteenth and fourteenth centuries. Specifically, the early development of short-term farm-out systems of individual plots and the costs related to water control caused a rising pauperisation and polarisation in this rural landscape.²⁹ The rise of the system of annuities, a specifically rural credit-system where owners sold parcels of their land and leased it back for a (high) rent, shows that pauperisation must have spread fast from the end of the thirteenth century onwards.³⁰

This is shown by the polarised land division during the fourteenth century in the estate of the abbey of Saint Peter's near Walraversijde. Up to 66% of the land was owned by a large group of owners with a property of less than 5 hectares, living in 50 'farmsteads' in the rural area behind the fishermen's village. It is generally accepted that during the fourteenth century, many pauperised farmers, like the submarginal commercial survival farmers in the domain of Saint Peter's, had to look for extra income. They had several options, such as working as rural labourers, or non-agricultural income strategies such as (seasonal?) sea-fishing, peat digging and maybe also salt production for the preservation of herring.

On the beach between Middelkerke and Mariakerke, close to Walraversijde, many peat extraction pits from the thirteenth and fourteenth centuries were documented, probably providing the peat needed for the production of salt through the process of *selnering*.³¹ This technique aimed to extract salt from the peat (*darink*) by drying and burning it, after which the ashes (*zel*) were mingled with sea-water to become brine that was heated in pans to produce salt. This took place in salt workshops, probably near such towns as Ostend or Nieuwpoort, to which the peat or *zel* had to be transported. A written source from 1436 describes Coppin Varsschenare, a member of the most prominent family of fifteenth century Walraversijde, involved in the erection of the chapel, as 'torman van Wilravenside'.³² A *torman* or *torfman* was a

²⁹ Verhulst (1990); Thoen and Soens (2003); Soens (2001).

³⁰ Thoen and Soens (2003); Tys (1996; 1997).

³¹ Salt production was an important link in the 'chaîne opératoire' of sea fishing and the production of salt must have been rather intense in and around the fishing settlements in late medieval coastal Flanders. See Leenders (1999) on the process of *selnering*.

³² 'Phelips van Longpre smaendaechs 5 in maerte ter Nieupoort bi borchmeesters ende scepenen aldaer omme bistandichede te doene Coppin Varsschenare ende *torman* van Wilravenside, vrylaet van zekeren onrechte datmen hemlieden up tiende was'. Algemeen Rijksarchief (ARA), Rekenkamer, Rekeningen van de Schepenen van het Brugse Vrije, no. 42555, f.29v.

peat trader and/or a peat transporter.³³ It is possible that the production of salt was initially an inherent activity of the fishing village and that Walraversijde produced at least some of the salt it needed to preserve and trade the catch. It also shows that it was possible to build a prominent social and economical position in the village through the sale and processing of peat and possibly also the production of salt.

It is possible that the subsistence problems and the need for extra income by peasants from the pauperised rural hinterland influenced the evolution and expansion of Walraversijde into a permanent settlement in the thirteenth and fourteenth centuries. Thus Walraversijde developed from a count's holding to one of the many coastal fishing villages. This evolution took place in close relation with the commercial development of the medieval rural economy fuelled by the urban centres and was based on resources at sea (fish), on the beach (peat) and in the rural hinterland (labour).

At the end of the fourteenth century, the spatial as well as the social context of the village changed thoroughly. To understand this, we have to look at the rural hinterland of Walraversijde (and other coastal settlements).³⁴ Erik Thoen and Tim Soens show that whenever temporary distortions in the income of the submarginal and small peasants occurred, they faced insolvency to pay leases or annuities.³⁵ This was worsened by the success of the lease system and the rise of lease prices, which contributed to the further impoverishment of peasants and farmers, leading to rising debts and an eminent danger of expropriation. This situation reached a catalysing momentum in the coastal plain at the end of the fourteenth century, with the outbreak of the war between the town of Ghent and the Count of Flanders, between 1379 and 1385. During these years, the farmsteads at the domain of Saint Peter's were temporarily abandoned.³⁶

This may also have left traces in the material record of Walraversijde as well. Below one of the fifteenth century fishermen's houses a coin hoard was found consisting of 211 silver coins struck on behalf of Louis de Male between 1373 and 1380, wrapped in Italian silk and buried in a red earthenware cooking pot. As the most recent coins suggest, they

³³ Verwijs and Verdam, vol. 8, col. 577.

³⁴ Soens (2001); Thoen and Soens (2003).

³⁵ Thoen (2001); Soens and Thoen (forthcoming).

³⁶ Thoen (1988); RAG, Fonds Sint-Pietersabdij, Rek. 837/2 and I. 314, f° 5 r°–7 r°.

were probably hidden in the ground in the initial years of the war and were never recuperated afterwards. The reasons for this can only be guessed at but the death of the person who hid them is very likely.

Many small and submarginal peasants and farmers took part in the 'Ghent War' between 1379 and 1385, which had in coastal Flanders more of a social than a political character, as is shown by the list of confiscations from the defeated 'rebels'.³⁷ This and probably also a number of expropriations changed the agricultural context of Walraversijde drastically. Forty-four out of fifty farmsteads disappeared from the landscape as a result of this crisis, and these lands were concentrated in the hands of a small group of large landowners.³⁸ Thus, an important phenomenon of farm abandonment and land nucleation had occurred. The presence of many relic moats on the lands of the fifteenth century larger landowners shows that this transfer of land happened at the detriment of many peasant farms from the fourteenth century.

This was however not the only disaster. Because of the social, economic and political difficulties, the dune belt was not maintained sufficiently, causing heavy sand drifts during the fourteenth century.³⁹ The weakening of the dune belt made the positions of the settlements in or just behind these dunes, like the fishing settlements, vulnerable. It was inevitable that a large storm flood would confront the coastal society with disaster, so it is not surprising that the Saint Vincentius flood of January 1394 drowned almost the entire town of Ostend and caused heavy sand drifts and floods in the immediate surrounding area of Walraversijde.⁴⁰ As a result, the village houses of Walraversijde ended

³⁷ ADN, B 5627–5628: rekeningen van de Souverein Baljuw 1386–1387.

³⁸ Tys (1996; 1997).

³⁹ Augustyn (1992); Tys (1996).

⁴⁰ Lettres d'accroissement de la ville et eschevinage d'Ostende, janvier 1394: 'Philippe va. et nous Marguerite duchesse, Contesse et Dame des pais et lieux dessus dis savoir faisons a tous present et avenir que comme de pieca les bourgmaistres, eschevins, bourgeois, habitans et communauté de notre Ville d'Ostende nous eussent fait exposer que en temps passé les dis exposans avoient eus et soustenus tres grans dommages par les fortunes, orages et innundations des eaux de la mer par les quelles les meeter/s de l'eschevinage de notre dite ville ainsi com le poroit clerment veoir estoient grandement amenriz et racouvriz mesmement que par les tempestes et orages qui estoient avenuz au dit lieu d'Ostende la nuit de Saint Vincent l'an Mil trois cens quatre vingt et treze [= 22 January 1394] plusieurs maisons de notre dite ville et grant quantité de la place du dit echevinage des tres grans et oribles innundations des dites eaues de la mer avoient esté noieern emportéer et mises soubz leaue, tellement que par l'ammenrissement de la place dudit eschevinage plusieurs des diz Bourgeois et habitans ne savoient ou demourer ne remectre et edifier en icellui eschevinage leurs maisons.' ARA, Rekenkamer, cartularia

up in front of the dunes. Hence, the settlement had to be rebuilt inland on farmland of the domain of the abbey of Saint Peter's. It is this settlement that has been excavated and studied since 1992.⁴¹

The rebuilding of the settlement must have happened in an organised way, as is shown by the archaeological data: most of the houses are placed in parallel or perpendicular rows. The new Walraversijde was already protected by a new dike against sand drifts five years after the disastrous flood.⁴² One of the questions that arise is on whose initiative and in which context the rebuilding of Walraversijde took place? On the one hand, we would be inclined to interpret the systematic rebuilding as a realisation of the existing, well-organised fishing community. On the other hand, this would be rather surprising, given the damage that war and flood inflicted upon the fishing community. In the middle of the fourteenth century, similar floods in England resulted, for example, in the partial desertion of a fishing port like Ravenser.⁴³ This did not happen in Walraversijde. The question is why and how.

The structural change in the rural hinterland of Walraversijde provided a labour surplus of families from the abandoned farms and cottages behind the village. It is possible that this labour surplus was transformed into labour specialisation by the choice to work on the fishing fleet of Walraversijde and to live in the newly built village. Herring and other sea-fish kept their economic value on the market. It would explain why Walraversijde was not abandoned during this crisis but on the contrary evolved into a large nucleated coastal settlement in a changing rural context.

Political authorities could have played a role in this evolution, since the rebuilding of Walraversijde could have been supported, or even organised by the higher political authorities. The aforementioned were also involved in the rebuilding of Ostend in the same period. But there are still other connections between Walraversijde and the higher political authorities around 1400. Between 1383 and 1413, there was privateering and piracy between Flemish and English fishing and trade ships,

776: extrait du registre des chartes de 1393 reposant en la chambre des comptes du Roy a Lille: f.54r-55r.

⁴¹ See note 1.

⁴² 'Ywain van Straten ende Jan van Ghent upten zelve dach [29 June 1399], te Wilravenshede om te scauwene den neuen dijc'. ARA, Rekenkamer, Rekeningen van de schepenen van het Brugse Vrije, no. 42523 f.20r. See Pieters (1994) on the archaeological data related to the dike.

⁴³ Bailey (1991).

often under the supervision of the admirals of the Count of Flanders/Duke of Burgundy, like Jan Buuc and Jan Blankaert.⁴⁴ The fishermen of Walraversijde seemed to have participated in this privateering, even in such a way that the duke and his administration had to reprimand the fishermen from time to time, especially when freebooting was politically less opportune.⁴⁵ In 1404 the aldermen of the Franc of Bruges (Vrije van Brugge), the independent countryside around Bruges, warned that nobody should set sail to sea to plunder or damage ships, unless ordered to do so by the lord.⁴⁶

In other words, Walraversijde fishermen acted as privateers under the orders of the duke. This fits with the context of the impoverishment of the rural hinterland and the search for new and extra income. The fishermen also supplied the duke's fleet with ships, and the fishing fleet with

⁴⁴ Viaene (1960); Sicking (1998).

⁴⁵ 'Willem van Messen ende Jan van Boeyegheem ts maendaechs den 13sten dach in november te Brucghe met den ghedeputerden vanden steden ter parlamente daer de maren camen dat die van Biervliet, Hughevliete, Blankenberghe, Oostende, *Wilravenshide* ende vander Nieuwerpoort elc bi wilen hadden ter zee gheweist ende der coopliden van Ingheland ende ooc Hollanders ende Oosterlinghen goet ghenomen ter zee ende te land ghebrocht daer zijt onderlingh ghedeelt haddenu up dwelke de voorseide ghedeputerde van den steden raet ende avys hadden dit nemmer gheschien zoude ende drougen over een te zendene an onsen gheduchten heere vanden welken elc vanden ghedeputerden vanden steden namen haer verhalen.' ARA, Rekenkamer, no. 42527 (1403–1404): f.37v.

⁴⁶ 'Wouter vanden Gate, Ywein van Straten ende Jan van Boeyegheem ts maendaghes den 23sten dach in april met den ghedeputerden van den steden ter Sluus, te Heys, te Blankenberghe, t'Oostende, *Wilravenshide*, Lombardien, Nieupoort, Dunkerke ende te Greveninghe omme te sprekenne met elker stede zonderlinghe met den Capitaine Amirael, baillius, buerchmeesters, scepenen, met meester van scepenen ende den scipliden, hemlieden te zecghene van t ghemeens lands weghe dat niemant uut varen zoude ter zee noch laten varen omme roven of om yement scade te doene, iof het ne ware bi bevelle van onsen gheduchten heere ende zinen lande van Vlaendren ende dat men bi alle weghe van groten vervolghen doen zoude an den coninc van England, omme restitucie van scaden die d'Inghelsche den Vlamingen grotelike gedreghen hebben ter zee.' ARA, Rekenkamer, nr. 42527 (1403–1404) f.44r.; 'ts disendages 18 december, ten beveilne vanden bailliu van Brucghe ende Willem van Messeem t'Oostende, te *Wilravenshide* ende van danen te Leffinghe anden crichouder vanden Vryen omme te wetene zeker maren van een deel Inghelsche scepen die daer up de zee ghezien zouden hebben gheweist also den voorseiden bailliu was laten weten.' ARA, Rekenkamer, nr. 42527 (1403–1404) f.66v.; 26 November: 't'Oosthende, *Wilravenshyde*, ter Nieupoort, te Hughevliete, te Biervliet ende al omme up die zeecanten, omme restitucie te doen doene vanden goede dat de visschers van der voornoemden steden ende hyde ghenomen hadden ter zee.' ARA, Rekenkamer, nr. 42527 (1403–1404) f.81v.; 'Jan Zuerinck ende Jan de Baenst swondaeghs den laetsten dach in april te Heys, te *Wilravenshyde*, omme de zeelieden te verbiedene van sghemeens lands weghe dat zij gheene rebelhede doen zouden up Inghelsche iof up andre varende bider zee up de vrientscepe vander lande' ARA, Rekenkamer, no. 42528 f.13r.

guard ships, throughout the fifteenth century. It is remarkable in this respect that from the numerous coastal settlements that are mentioned in the written sources from the twelfth to the thirteenth centuries, only the coastal towns and larger ports (Grevelingen, Dunkirk, Nieuwpoort, Ostend, Biervliet) survived, joined by the fishing settlements of Heist and especially Walraversijde that had clearly become more important, economically as well as politically.⁴⁷ This economic and political role and importance is also expressed in the infrastructure and the material culture of the new fifteenth century village.

A flourishing community with international contacts, 1425–1475

The limited written sources present the fifteenth century fishing community of Walraversijde with a very typical profile:⁴⁸ a large group of people, half of whom were away from home for a long time. At the top of the social hierarchy were the captains or *sciplieden*, the owners of the fishing vessels. They were until the first half of the fifteenth century the central persons in the village. Each ship could contain twenty free and independent fishermen, and each brought his own nets and had a share in the profits.⁴⁹ Historical records show the presence of fishermen from Walraversijde in English ports, and these fishing activities were commercially oriented, which is also shown by the archaeological record.⁵⁰ The knowledge of the maritime environment, fishing techniques and sea routes were very important within the social hierarchy as well. This

⁴⁷ Other fishing settlements like Nieuwe Yde and Blutsyde shrank and disappeared in the fifteenth century, while Blankenberge, which had once been the leading fishing fleet of coastal Flanders, was merely a shadow of its heyday. In 1480 there were 16 captains in Walraversijde, 10 in Heist, 7 in Blankenberge and 50 in Ostend. Degryse (1963).

⁴⁸ Compare with Collet (1991) and Geistdoerfer (1977).

⁴⁹ Degryse and Mus (1967). '...Clais fs. Jans Heinricx ende zynen veinoten, vrylaten wonende te Wilravensyde...', ARA, Rekenkamer, 42541 (1420–1422) f.66v. 'Anthuenis van Boneem ende Jan vander Leye sonden den zelven dach (10 August, zondag) ghelast te treckene te Coxyde, te Slepeldamme, te Heys, te Wendune ende te Walravenshyde omme de stiermans aldaer te kennene te ghevene ende te openbaerne de ordenanche ghemaect biden 4 leden slands van Vlaenderen anghaende den pyloten die men heet leetsmannen (loodsen), zout, harinc ende tonnen. Ende voort omme den eed vanden vorseiden *stiermans ende haerlieder veynoten* te ontfane naer den inhoudene vander vorseide ordenanche', ARA, Rekenkamer, 42560 f.39v^o–40r is the last time we find this description.

⁵⁰ Degryse (1939; 1944; 1959; 1963; 1987); Degryse and Mus (1967) 89; Tys (1996).

is shown by the request for information by the alderman of the Brugse Vrije to the shipmen and elderly fishermen of Walravensijde concerning the *pilotage* or guidance of ships through the Zwin-estuary and the salt to be used in fish preservation.⁵¹ As was the case in other fishing communities, Walravensijde fishermen could be quite violent and sometimes they resorted to piracy. Because of this, fishing communities were seen as rather marginal, as written in a contemporary document.⁵²

In the course of the fifteenth century, the development of larger ships for offshore fishing, which could sail to the rich fish grounds near the Doggersbank, required some financial input from fishermen, an expense they could ill afford.⁵³ Financial support was offered by rich fish merchants who could invest in the fleet. Consequently, ship owners or 'wards' got a firm grip on offshore fishing. The role of the captains was reduced, while the fellow fishermen were replaced by wage fishermen

⁵¹ 'Jan van Boneem smaendaegs 23 in september te Heys, te Blanckenberghe, te Wendune, t Oostende ende te *Walravensyde* omme aldaer advys te nemene metten stiermans ende ouderlinghen hoe men best de grote scepen ter Sluus int Zwin bringhen zal zonder breken ende wat voorzienichede men hebben zal vanden 'quaden zoute daer de visschers haren harynck ende visch mede zouten', ARA Rekenkamer, 42560 (1448–1449) f.16r.

⁵² Vlietinck (1889).

⁵³ Between 1420 and 1430 various fishermen had debts to herring merchants, which resulted in, among others, the confiscation of their *corfscepe*. 'Jan van Boneem ende Heinric van Meetkerke, smaendages de 13de november ter Nieupoort, anden bailliu ende anden wet omme tellivererd te hebbene *Chrispiae*n *Gheeraerds*, *vrylaet*, *stierman van Wilravensyde* daer ghevanghen ombewetticht te verzoucke van Jacop Meynin, poortere van Lombaerdien, de welke hem anleghende was dat hi zine netten of ghesneden hadde inde zee, daden zo vele dat de voorseide *vrylaet* ontslegghen was costeloos ende scadeloos'. ARA, Rekenkamer, 42541 (1420–1422) f.74v. 'Jan van Boneem ende Meester Hellin van Steelandt, smaendages den 30sten in maerte te Lombaerdyen anden bailliu ende wet omme ontslegghen te hebbene van vanghenessen *Jan Heins vrylaet in Wilravenshyde* daer ghevanghen van sculden ombewetticht ende onverbonden ten verzoucke van Diederic fs. *Gheeraerds*'. ARA, Rekenkamer, 42541 (1420–1422) f.80v. Jan van Boneem ende Jan van den Rine sdcendaechs 7 in wedemaent ter Nieupoort omme te verzoukene de delivranche van eenen *Coorfscepe* ende zeker andre goed toebehorende *Jacob fs. Chrispiae*n *Gheeraerds vrylaet wonende te Wilravens Yde*, daer ghearresteert ten verzouke van Jorisse fs. *Jacobs Poorters* aldaer omme scult ende voorworde van coopmanscepe van haringhe, voortyts ghemaect binnen der stede vanden Damme daer of de voorseide *vrylaet* was ombewetticht ende onverbonden twelke arrest was contrarie den privilegen vanden lande, ende was zo vele ghedaen dat hi ende zijn voorseide goed telivereirt waeren costeloos. ARA, Rekenkamer, 42545 (1426–1427): 44r° and 42547 (1428–1429) f.42r. and f. 44v. And several other similar stories of ships that had to be sold in order to redeem the debts of captains of Walravensijde who could not pay the tolls of Nieuwpoort anymore.

or *huercnapen*.⁵⁴ This trend was evident in Walraversijde and several vessels worked for wards from Ostend and Nieuwpoort.⁵⁵

The information available throws an interesting light on these developments, since in Walraversijde the van Varssenare family also acted as wards of several ships of Walraversijde. This family seems to have been involved in peat trade and also possibly salt production. It seems that through the peat (and salt?) trade, enough capital could be accumulated to allow investments for warding. The van Varssenare family was the most prominent in the village, and acted as the political contact between the village and the aldermen of the Brugse Vrije.⁵⁶ This evolution ran completely parallel with the capitalist developments in agriculture in the polders landward of Walraversijde. The farms over there also fell into the hands of members of the rich, urban elite, whose members did not participate in the production process itself.

Fifteenth century Walraversijde was considerably larger than the neighbouring agricultural villages such as Middelkerke, which consisted of some farms around the church. At the same time, it was quite smaller than the neighbouring town of Ostend. It consisted of at least 100 houses and some specific community spaces such as the *draeyplaetsen*, where cordage was made, the brewery, the *Caetsspel* (a game or an inn and brothel) and from around 1435 also the chapel. In spite of the commercial orientation of their fishing, and other trade activities, legal or otherwise, Walraversijde did not have its own market infrastructure.⁵⁷ Regardless of the relatively large number of inhabitants, Walraversijde never became an independent parish.

As was the case with other fishing communities along the North Sea, the place of worship, though remarkable in size and prestige, always kept its status as a chapel.⁵⁸ This chapel, at the head of the Chapel street, the main street of the village, was dedicated to St. John and featured three aisles and altars, of which the north altar was dedicated to Mary and the south altar to St. Sebastian.⁵⁹ The tower of the village church

⁵⁴ Degryse and Mus (1967).

⁵⁵ Degryse (1959; 1963).

⁵⁶ 'Item de zelve swonsdaechs 26 in merte te Wilravens Yde met 1 brieve an Pieter van Verssenere.' ARA, Rekenkamer, 42545: f.53v.

⁵⁷ See also note 52.

⁵⁸ Compare with the medieval fishermen settlement Walberswick, where the 'chapel' had the dimensions of a 'magnificent church' and with the situation in Devonshire. Warner (2001); Fox (2001).

⁵⁹ English (1960).

was rather prestigious. The chapel was built in the village well before 1438, on the initiative of several wealthy and powerful members of the coastal society, of which Lord *Willem van Halewijn*, councillor of the duke, knight of Uitkerke, bailiff of Bruges and large landowner, was the most important.⁶⁰ The other founders are not known by name. However, when we look at who was buried inside the chapel, we get an idea of the families involved in the village and of their social position.

Amongst the graves in the chapel, there are the tombs of members of two families of aldermen, the regional elite of the coastal area: the Reyphins family, whose members were also large landowners in Leffinge; and the Van Schore family, who were comprised of noblemen, and count's knights, and connected to the village of Schore near the Yzer.⁶¹ The Reijphens family was connected with Walraversijde through the marriage of captain Jacob Heijns with lady Lijsbette Reijphens.⁶² They were both buried in the chapel, as was another member of the family (Margriete Reijphins). According to nineteenth century observations of the chapel ruins, the family's weapons were depicted on the stained glass windows and on the altar of the chapel.⁶³ Many members of the most prominent family of the village, the van Varssenare, were buried in the chapel as well,⁶⁴ and Pieter van Varssenare founded a service in 1479.⁶⁵

Undoubtedly the Reyphins, van Schore and the van Varssenare families were all closely involved in the foundation and building of the chapel, and donated land to the chapel by founding services of worship. The chapel and its ornaments, including the stained glass windows with family weapons, were more than just displays of the wealth of the community or of its most prominent families. The construction of this chapel involved a kind of gift-exchange relationship between the members of the elite families and the community of Walraversijde. On a basic level,

⁶⁰ Vlietinck (1889), English (1960).

⁶¹ 'Item in de voorseide kercke ligghen diversche van die elde Schooren, die d'herminen draeghen'. Bethune (1900).

⁶² Gaillard (1858); Bethune (1900).

⁶³ Gaillard (1858).

⁶⁴ 'Voor sinte Sebastiaenscapelle licht onder eenen blauwen zarck Jan van Varssenare fs Jacobs, obiit 1438, op Sinte Jans Evangelistendach, ende vrou Margarite zijn wyf, daer hij bij hadde eenen zeune ende drij dochters. Oost van de voorseide sepulture, blauwe zarck, licht Cornelis fs. Joos van Varssenare, obiit 1460, den 15 oust. Aen de noortzijde licht joncvrause Cateline fa Cornelis van varssenare, obiit 1461, den 15 oust'. Bethune (1900).

⁶⁵ Vlietinck (1889).

the construction of a religious building for a community was exchanged for the memory of the founders. On a more sophisticated level, through the *memoria*, the relationship involved the exchange of the foundation of a prestigious chapel for the loyalty and connection of the fishing community to the network of power of the founders.

This *memoria* was recalled every time the inhabitants of Walravensijde walked through the main street (*Chapelstreet*), dominated by the chapel at its end, and every time the weapons of the elite families struck the eyes of the inhabitants when they attended mass. It is remarkable that we find amongst the founders and sponsors two families of aldermen and one councillor of the duke himself, next to members of the most important and richest families of the community itself. This is exceptional for a chapel in a so-called marginal settlement without an official statute.⁶⁶ It shows that the chapel was a spatial and material tool for certain political aspirations of the founders, as well as the involvement of Walravensijde in the wider political network of the policy and power of the duke and his court. This position has to be understood in the context of the fact that the fishermen acted as privateers and delivered ships and men for the fleet of the duke when requested.⁶⁷

The chapel thus was rather a symbol of 'control' that signalled the standing and presence of the three power groups in the village. The chapel also indicates that the fishermen, in spite of their rather rough way of life, were pious Christians. In this manner, the chapel was the perfect symbol for the particular position of this fishing community between centre and margin, and between sea and heaven. It is precisely this phase of the evolution of the fishing village which has been documented in great detail by the still ongoing archaeological research. Houses were predominantly in brick, the spatial organisation reflects an urban environment (figure 2) rather than a rural one, and the material culture reveals a society which is predominantly occupied by fishing and which had access to almost everything available on the market between 1425 and 1475. Some of the most important aspects related to these three characteristics are briefly summarised and commented on below, starting with the physical characteristics of the houses.

⁶⁶ Dumolyn and Moeremans (2003).

⁶⁷ The dukes had no permanent fleet in the fifteenth century and requested merchant ships or fishing vessels to act as warships when necessary, for instance for the protection of the fishing fleet (*konvoyering*) in times of war at sea. Degryse (1948); Sicking (1998).

Fig. 2. Digital reconstruction of Walravensijde at its heyday (c. 1465).



Brick was the dominant building material in fifteenth-century Walravensijde. The brick walls were probably plastered over on the inside as well as on the outside. Inside the houses the plaster was sometimes decorated with incised pointed brickwork or painted in haematite red. Some of the houses had stained glass windows. The flooring was made with bricks or simply consisted of clay covered from time to time with sand. The roofs were thatched with reed, straw or galingale. The rectangular houses had a lengthwise orientation from north-east to south-west. The width of the houses varied between 3.7 m and 8.8 m, the length between 12.4 m and 17.5 m. Generally, two types of houses can be distinguished: houses with a surface less than 100 m² and houses with a surface above 100 m². The last group is also characterised by the presence of additional features such as brick latrines, brick wells, red painted plaster or glass windows that were absent from the smaller houses. The largest houses were only twice as large as the smallest. Apparently, there was some social differentiation in these communities but not that much according to the size of the houses.

The heating device was in general situated against the wall or very close to the wall. Pit coal, wood and peat were the available fuels. Only wood and peat ashes are present in the archaeological sediments.

Artificial light was made with bronze candles and ceramic oil-lamps. Drinking water was taken from barrel and brick wells. The brick wells only came into use during the second half of the fifteenth century, precisely when the barrel wells disappear from the archaeological record. The treatment of the household refuse and other waste matters seems to be rather specific as cesspits are rich in fish remains, while mammal bones are absent from their infilling. Mammal remains on the other hand are to be found in refuse pits and in specific areas destined for waste disposal.

The occupation density at Walraversijde is much higher compared to non-fishing rural settlements. At Walraversijde there was approximately one house per 300 m². In any case no room was left for stables, gardens and fields in between the houses. This clearly reflects a community mainly occupied by the sea. Agricultural infrastructure could have been present at the edge of the village but archaeology failed to identify this so far. The spatial organisation of Walraversijde is also clearly different from the one of Wharram Percy, a typical example of a medieval village in East Yorkshire based on agriculture and breeding of livestock.

The overall impression of the material culture of the fishing community is one which first of all indicates fishing as a major occupation and which secondly gives substantial proof of access to a number of commodities which one would not expect to find in fishing communities: exotic spices such as paradise grains, cloves and pepper, exotic fruits such as pomegranates, ivory combs, cast bronze candlesticks and luxury ceramics such as Spanish lustre wares from Valencia, Màlaga and Sevilla. The case of the Spanish lustre wares is interesting as it might offer a clue to understanding the presence of such luxury commodities. The Spanish lustre wares occur in small quantities throughout the settlement and they are not—as one would expect—restricted to a few privileged households. The entire range of the lustre wares is not present, only a selection of dishes and bowls. The arrival of these lustre wares should thus have been rather regular, more or less continuous and be the result of a selection.

Piracy, privateering and beachcombing have certainly played a role in this but do not explain on their own the presence of these wares. The piloting of Spanish merchant vessels by Flemish fishermen to the port of Bruges would be a more probable hypothesis. This mechanism could indeed explain the omnipresence, the nearly continuous arrival of these goods in the first half of the fifteenth century, and the apparent selection. The fishermen probably received as a kind of special

gift Spanish lustre wares but probably also pomegranates, spices and ivory combs which all arrived in Flanders via the same Spanish and Portuguese merchants. The silting up of the harbour of Bruges directed Spanish and Portuguese merchants more and more northward from the second half of the fifteenth century onwards.⁶⁸ This meant that the importance of the fishermen as pilots of merchant vessels to Bruges was gradually reduced.

The presence of significant amounts of imported goods and novelties seems to be a general characteristic of fishing communities or even of maritime communities as a whole. It has also been observed in the context of the seventeenth century Newfoundland fishery. Maritime societies were, as explained by Peter Pope, in 'a position to tap international flows of goods, even when these were directed elsewhere, geographically or socially'. These communities also more often had the opportunity to express demand for novel goods before their social peers inland. Pope is convinced that the regions showing evidence of early mass demand should first of all be qualified as maritime, thus giving maritime communities an important role in the genesis of consumerism.⁶⁹

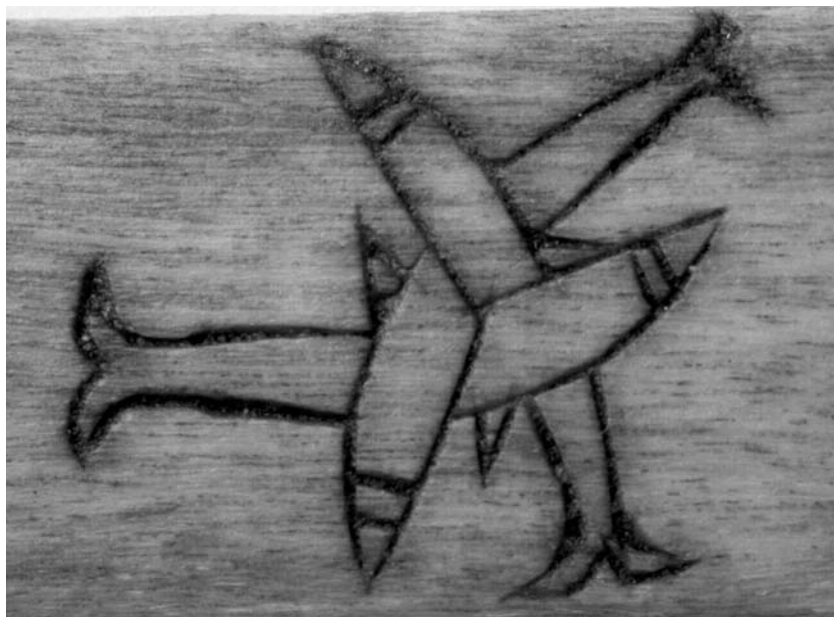
The material culture of Walraversijde is of course predominantly characterised by aspects related to fishing. According to the material remains, different fishing technologies were applied: floating gill-nets, trawl-nets, lines and hooks. Numerous wooden net needles point at least to the local mending of nets. These net needles are systematically marked by property marks such as a nicely carved three fish motif (figure 3) depicted on one of these needles. The dimensions of the net needles and the lead weights point to nets with meshes from 2.2 to 3.8 cm. Nets with such meshes can be used for making coastal trawl-nets but also for the well-known herring-nets. The numerous cork floats fit entirely into the concept of the herring-net. Stones incrustated by *Serpulidae*, marine organisms mainly living below the low water line, the remains of starfish and the presence of fish remains from very small individuals, on the other hand, seem to relate to the use of the trawl-net. The fish-hooks are without exception made from iron and have a round section. Some of these reach lengths of 13–14 cm and were undoubtedly used to catch large species such as cod and haddock.

The fish remains themselves consist mainly of bones from herring, cod, flatfish, and eel. The large variety of species caught reveals that

⁶⁸ Degryse (1975; 1980a; 1980b).

⁶⁹ Pope (2004).

Fig. 3. Three fish pattern carved in a wooden net needle found at Walraversijde, fifteenth century.



fishermen from Walraversijde fished mainly in the southern North Sea. Estuarine species and species typical for the so-called English Channel and more southerly waters are lacking as well as species from more northerly waters. A number of other archaeological finds can be related to fishing as well, such as numerous artefacts (potsherds, wool, fleeces and shoes) with traces of tar and/or pitch. Working with tar and/or pitch can be considered as a typical maritime activity. The catch also has to be processed for consumption by the fishermen themselves or by others. The numerous barrels found in so-called barrel wells are revealing in this respect. They can be interpreted as barrels which the Hanseatic merchants brought filled with Scanian herring from the Baltic to the Low Countries.

The production and trade of Scanian herring was protected by a monopoly. Dendrochronological analysis has revealed that the oaks for the barrels were felled in the vicinity of Danzig/Gdansk in the period between 1380 and 1430.⁷⁰ Barrel wells ceased to be used at Walraversijde

⁷⁰ Houbrechts and Pieters (1999).

at the moment that the trade in Scanian herring was superseded by the locally produced 'Scanian-type' herring and after the abolition of the Hanseatic monopoly.⁷¹ Thus, the barrels found at Walraversijde must be connected with the international trade in Scanian herring and not with the local processing of herring. The excavations also yielded data about the local processing of flatfish and about smoking of fish on the site.⁷² Small rectangular brick constructions can be interpreted as 'smoke-ovens' of which the production is beyond the consumption needs of a single household.

Next to fishing comes trade. It is fair to presume that the fishing settlements along the coast of Flanders took part in the trade in natural stones, pit coal, and fish. The archaeological inquiry shows that at least some of the residents in Walraversijde mastered the skills of reading, writing, counting, measuring, weighing and/or testing. The most telling object in this respect is a bone spectacle frame (figure 4), invaluable for reading when getting older. Such items are mainly found in archaeological contexts related to religious or mercantile environments. The last one fits very well for Walraversijde.

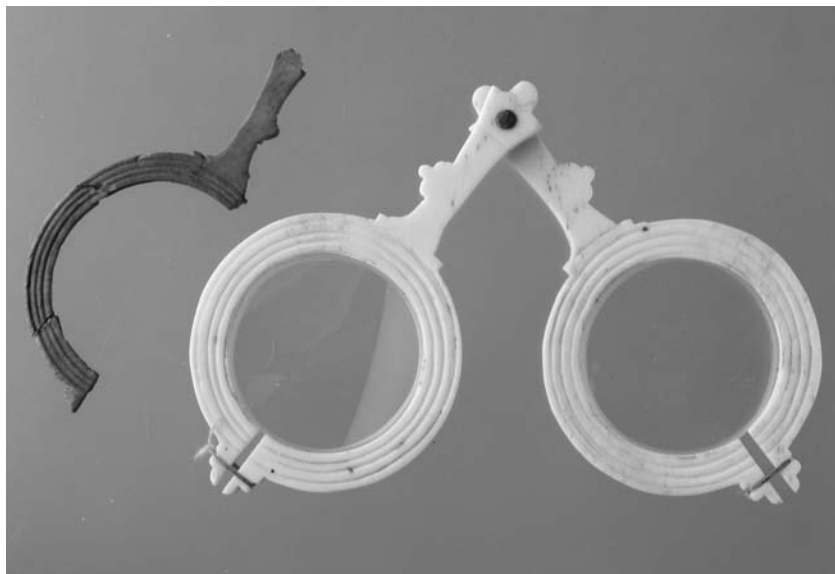
It is very difficult through archaeological research to establish the nature of the traded products. Far easier is to show archaeologically that fishing communities had access to a wide variety of commodities. Four regions can be shown to be of importance for the Flemish coast: East- and North-east England and East Scotland, the Baltic, the Rhine area and the Mediterranean. The easy access to these products was a result of trade, piracy, beachcombing and piloting merchant vessels to the port of Bruges, as has been indicated before. The material culture of the fishermen is in addition also characterised by the presence of weaponry. At Walraversijde fragments of kidney-daggers and crossbows have been found, as well as various stone shot for cannons, items which are not strictly speaking necessary for fishing. The presence of these items of weaponry is of course related to the above-described military role of this fishing community and to the general lack of safety at sea.

Important in relation to fishing and trade is to note that Walraversijde did not possess a harbour. We cannot escape the thought, however, of the presence of a specific landing-infrastructure at Walraversijde such as a landing-stage somewhat out at sea. Besides this, it was still possible

⁷¹ Unger (1978; 1997).

⁷² Van Neer and Pieters (1997).

Fig. 4. Bone spectacle frame from Walraversijde, fifteenth century.



to simply beach the fishing vessels at Walraversijde as in all the other fishing settlements. In fifteenth century Flanders only three coastal towns possessed a real harbour: Dunkirk, Ostend and Nieuwpoort,⁷³ all the other coastal places had to do without.

Decline and disappearance, 1475–1630

At the end of the fifteenth century, the Walraversijde community encountered major problems resulting from the general political instability in the region and the increased insecurity at sea. The war between Maximilian of Austria and a coalition between Bruges and Ghent (from 1483 and 1492) was fought for the most part in the area between Nieuwpoort and Ostend. The domain and the village were situated right inbetween the fighting parties and were probably deserted for several years. The disappearance of the settlement's most eastern quarter after 1500 proves that this instability had seriously damaged the community. The written sources show us that the houses in this quarter had been

⁷³ Laurent (1986).

abandoned and were ruined as a direct result of the conflict.⁷⁴ The archaeological sources also show that the abandonment was not the result of a sudden disaster, such as a fire or a violent storm, but was on the contrary gradual, and thorough in its recycling of the building components of the derelict houses.

The shrunken village of Walraversijde did not recover in the sixteenth century. On the contrary, the village had again to deal with sand-drifts. The village brewery closed its doors and the fishing fleet suffered from the increased danger at sea. Indeed, during the sixteenth century, the Channel and the North Sea were threatened by different parties and the Flemish fishermen were obliged to arrange for armed convoy-ships to protect their fleet.⁷⁵ The lack of safety at sea was only a prelude to the difficulties that followed with the Eighty Years' War (1568–1648). The war started with a blockade of the Flemish ports by the Sea Beggars. As a result, mercenary troops were sent to the coast, where they plundered and looted. During the following years, the war hit the coastal plain very hard. Walraversijde and the domain were almost completely deserted between 1571 and 1581. This was the year in which the dikes that surrounded the Calvinistic bastion of Ostend were breached in order to defend the town. From then onwards and for several years, the domain was flooded by the sea, which made the area uninhabitable.⁷⁶

In the following years, war raged on and ravaged the vicinity of Ostend completely. In 1598—as the written sources show—the domain and the village lay waste, because of the destruction of these parts through troubles and war.⁷⁷ While in the last decade of the sixteenth century the larger part of Flanders and its coast started to recover, Ostend and its surroundings remained a battlefield until 1604. That year, Spanish troops succeeded in taking the last stronghold of the Calvinist troops in what later on would be called the Southern Netherlands. After the siege of Ostend (1601–1604), the settlement was reduced to some isolated houses and the remains of the chapel.⁷⁸ The fishing community of Walraversijde had disappeared from the landscape but not from the archaeological record. The tower of the chapel (figure 5) remained

⁷⁴ 'binden dorpe van Walravinsyde...heift behust ghesyn nu al vervallen ende te ruynē'. RAG, Fonds Sint-Pietersabdij, rek. 840h: f.415.

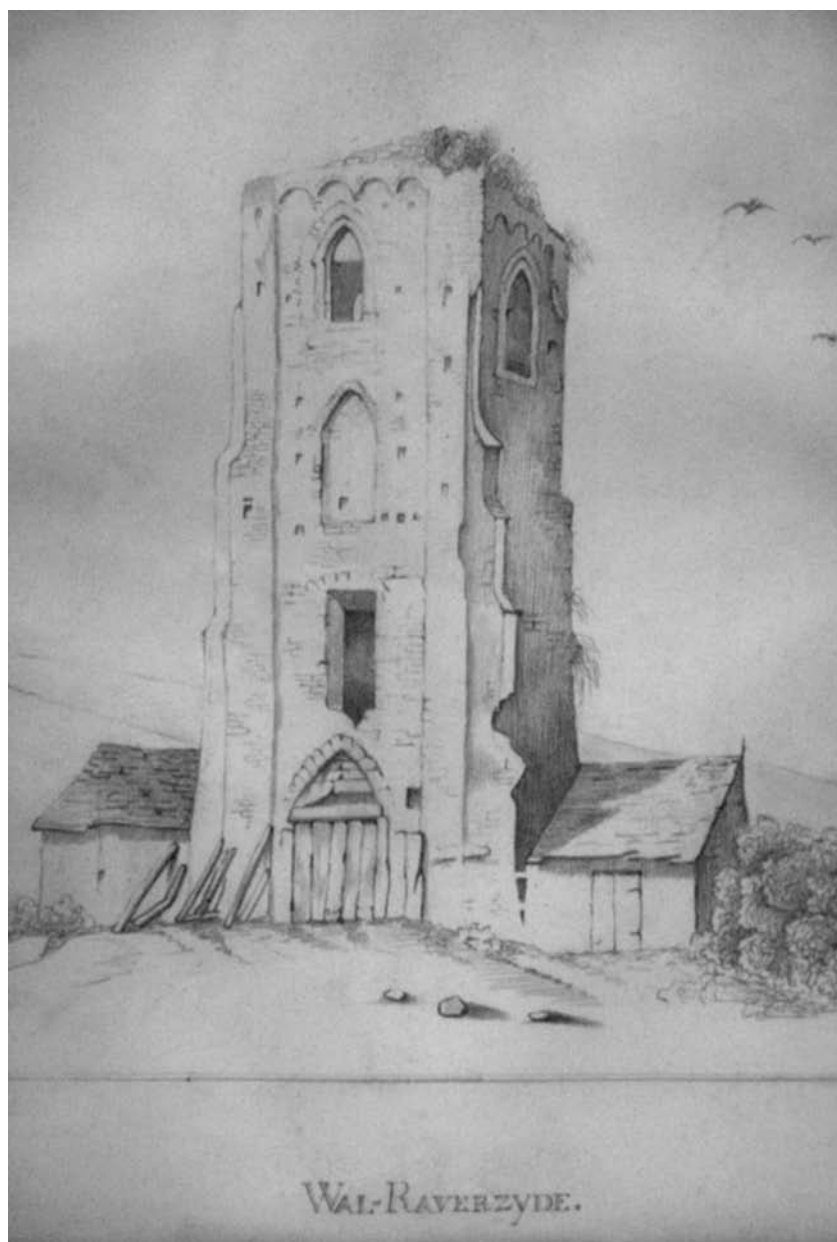
⁷⁵ Sicking (1998).

⁷⁶ RAG, Fonds Sint-Pietersabdij, Rek. 845a: f.37v.

⁷⁷ RAG, Fonds Sint-Pietersabdij, Rek. 845a: f.67v.

⁷⁸ Vlietinck (1889); English (1960); Tys (1997).

Fig. 5. The medieval tower of the chapel of Walraversijde still standing in the nineteenth century.



standing until the middle of the nineteenth century when it collapsed during a storm. It was, for a long time, the only reminder of the lost fishing village.

Conclusion and prospects for further research

Walraversijde originated probably as a temporary settlement at the margins of the agricultural world in twelfth or thirteenth century coastal Flanders, although older antecedents as an (invisible) temporary fishing camp in the surrounding comital estate are possible. The comital estate-system and economic and political strategies favoured and supported the intensive development of coastal fishing in Flanders between the tenth and twelfth centuries, which could be described at least as market-oriented, if not as commercial. At the very least, these developments created the context in which Walraversijde would take form and begin its particular history as a medieval fishing settlement. Several factors such as agricultural crises and wars paradoxically contributed towards its growth and expansion in the fourteenth century. In the fifteenth century it reached its climax by becoming far more important economically, as well as politically, than the neighbouring villages. In its heyday it could have housed about 500 to 600 people.

The material record shows the inhabitants to have had access to a variety of commodities available on the market and to have built housing of fairly decent quality. Yet, the settlement was not really acknowledged officially or organised institutionally, in a sense that it never became an independent parish or obtained its own market infrastructure. The chapel, although from the beginning more church than chapel, never became an official parish church. When conditions worsened during the sixteenth century, the inhabitants were not in a financial and/or economic position to hold on to their fifteenth century boom, due to a general lack of institutionalisation. The Eighty Years War culminating in the area of Walraversijde with the siege of Ostend (1601–1604) delayed any possibility of rebuilding the community. The fact that fishing folk were in the late medieval period considered a bit ‘marginal’ initially prevented their settlements from evolving into parishes, even if they had support from wealthy families in the inner circle of the Duke of Burgundy. In the end, when things got worse for the fishery, the lack of official status was probably one of the factors contributing to the decline and final abandonment of the fishing settlement at Walraversijde.

Archaeological research is able to bring in new data on medieval fishing communities, but in order to do so some requirements have to be fulfilled. To detect recurrent phenomena and specific characteristics in the material sources related to fishing communities, an important archaeological research program should be launched. This would comprise of the extensive excavation and study of at least one other late medieval fishing community and of at least two contemporary rural non-fishing settlements. Such a database is lacking and this hampers interpretations of the material record at a higher level. This void also prevents archaeology from being integrated more thoroughly into the historical debate. The start of 'maritime and fluvial archaeology' in Flanders offers high hopes that sooner or later a late medieval fishing boat will be found. Such a find, if well preserved, would provide some insight into the behaviour of fishermen at sea. Until now, the known information about fishermen is based on indirect evidence: the material remains found on land.

The study of fishing communities through their spatial history and from the development of their landscape allows us to differentiate between settlement types and to understand their particular developments and life trajectories, the different agencies, and the particularity of some processes interacting in these developments. More research is necessary to detect how medieval fishing communities and settlements developed and how they worked.

Late medieval fishing societies were, generally speaking, not very active in producing written records. Random finds of archival documents produced by the authorities in English medieval harbours suggest a wealth of unexploited information hidden in these archives. A thorough screening and subsequent analysis of the written records present in the archives of late medieval harbours such as Scarborough, Whitby, London, or Southampton, to name but a few, would yield valuable information related to medieval fishing communities from Flanders such as Walraversijde. Such a search would add considerably to the understanding of the extraordinary material records documented at Walraversijde.

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CHAPTER FOUR

TRANSFORMATION OF THE MARITIME CULTURAL LANDSCAPE OF ATLANTIC CANADA BY MIGRATORY EUROPEAN FISHERMEN, 1500–1800

Peter Pope¹

The way in which the early modern transatlantic fishery was organized, in the Old World, had practical implications for exploitation of the coastal resources of the New World. The migratory, shore-based, dry salt-cod fishery was a vernacular industry. That is to say, it was not centrally directed but a congeries of competing production units. Each transatlantic voyage was organized as much by custom as by co-ordinated long-range planning.² Merchants in the part of western Europe involved in the industry brought ships, crews and supplies together from different ports, but these factors of production flowed from the collective experience of geographically-bounded local communities. At the same time, a vernacular pattern is evident in the distribution of European activity in North America. Between the early sixteenth and the late eighteenth centuries, an internationally-accepted custom allocated shore stations to the migratory crews of different European regions. This custom permitted and even encouraged fishing crews from particular ports to return again and again, in a seasonal rhythm, to particular coasts in the New World, where they used boats to fish for cod in inshore waters, rather than fishing offshore in the ships that brought them from Europe. Historians have generally assumed that labour was scarce and land plentiful in early modern North America, but the reverse appears to have been closer to the truth for transatlantic fishermen. They revisited the same harbours for centuries and transformed them,

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² On vernacular as opposed to directed capitalism, see Pope (2004a) 30–2, 414–7; Pope (2004b).

to suit the needs of the shore-based salt-cod fishery. Between 1500 and 1800 European fishermen created distinct maritime cultural landscapes in Newfoundland and the Gulf of St Lawrence.

Who fished where and when?

The earliest phases of the transatlantic fishery are the hardest to parse, not simply because documentation is thinnest. The apparently simple question of who fished where is complicated by several factors. The transatlantic world was still unfamiliar to most Europeans, so that contemporaries were often vague about where crews had fished. When early documents do concede a toponym or two, they are commonly difficult to interpret.³ Charter parties often speak only of 'Terre-neuve' or even 'Terres-neuves', which in the early sixteenth century might be anywhere in Atlantic Canada.⁴ Many ports, large and small, sent vessels to the New World in the sixteenth century; the history of the transatlantic fishery through the seventeenth and eighteenth centuries is, in part, a history of concentration.⁵ Discussion of who exploited which North American coasts is also complicated by the frequent interdependence of ports one with another, for capital, equipment, victuals, salt and even labour.⁶ The European ports that developed the transatlantic fishery lie between northern Portugal and Normandy, with outliers in the west of England and south-east Ireland, a coastal zone which had already developed close regional commercial links, in the late medieval period.⁷ The intricate European geography of the industry noted, it is still worth trying to clarify who fished where in what period, even at the risk of over-simplification.⁸

At the turn of the sixteenth century, English and Azorean Portuguese mariners made the first documented transatlantic voyages to Atlantic

³ See, for example, the uncertainties in Biggar's collection of early documents, which are not examined, let alone corrected, in R. Cook's recent edition: Biggar (1911); Cartier (1993).

⁴ Turgeon (1995), but note Martijn (2003) 64–5.

⁵ Cf. de la Morandière (1962) 231–3; (1969) 28.

⁶ Innis (1954) 16–26; Turgeon (1995); Litalien (1995).

⁷ Westerdahl (1998) defines this as a single maritime transport zone.

⁸ E.g. Mannion and Barkham (1987) give great emphasis to the Basques.

Canada.⁹ Although an English ship, perhaps with an Azorean pilot, came home to Bristol with what may have been North American cod in 1502, the English remained minor participants in the transatlantic fishery until about 1565.¹⁰ The early sixteenth-century Norman captain, Pierre Crignon, gave the Portuguese credit for the initial exploration of what would later become the English Shore, the Atlantic coast of the Avalon Peninsula, in southeast Newfoundland (figure 1).¹¹ The toponymy of this coast provides strong confirmation of early exploitation by the Portuguese and a royal order of 1506 already refers to fish from Newfoundland.¹² Crews from Portugal's northern ports of Viana and Aveiro were fishing off the southeast Avalon through most of the sixteenth century.¹³ Portuguese *cerâmica commune* from early archaeological contexts at Renew's and St John's corroborates this presence, even if the documentary evidence suggests that it was limited, at least in comparison with French activity.¹⁴ Between 1580 and 1620, fishermen from the English West Country displaced Portuguese and others from this part of the New World, closest to Europe. Through the seventeenth century, the English expanded their production zone northwards, as far as Bonavista Bay. In the following century, West Country and local *planter* fishermen then moved gradually westwards through Notre Dame Bay. The eighteenth century also saw Irish merchants and fishermen move into Placentia Bay, west of the Avalon, and from there along the south coast of Newfoundland, which French fishermen were forced to abandon, by the Treaty of Utrecht, in 1713.¹⁵

Breton fishermen ventured to Atlantic Canada in the first decade of the sixteenth century, perhaps as early as 1504. Crignon credited the

⁹ Quinn (1977) 108–36. The Norse visited Newfoundland about AD 1000 but they arrived from Greenland or Iceland. The suggestion that the English fished cod off Newfoundland or Labrador in the decades before Zuan Cabotto's voyage of 1497 remains speculative; but see the evidence adduced in Quinn (1977) 60–4.

¹⁰ Customs account, 1502, in Quinn (1979) vol 1, 110; Gray (1992).

¹¹ P. Crignon, 'Discorso d'un gran capitano di mare Francese del luogo di Dieppe' in G.B. Ramusio, *Navigazione et Viaggi* [1550–1559] vol. 3, 423–4. Quinn (1979) vol. 1, 136–7.

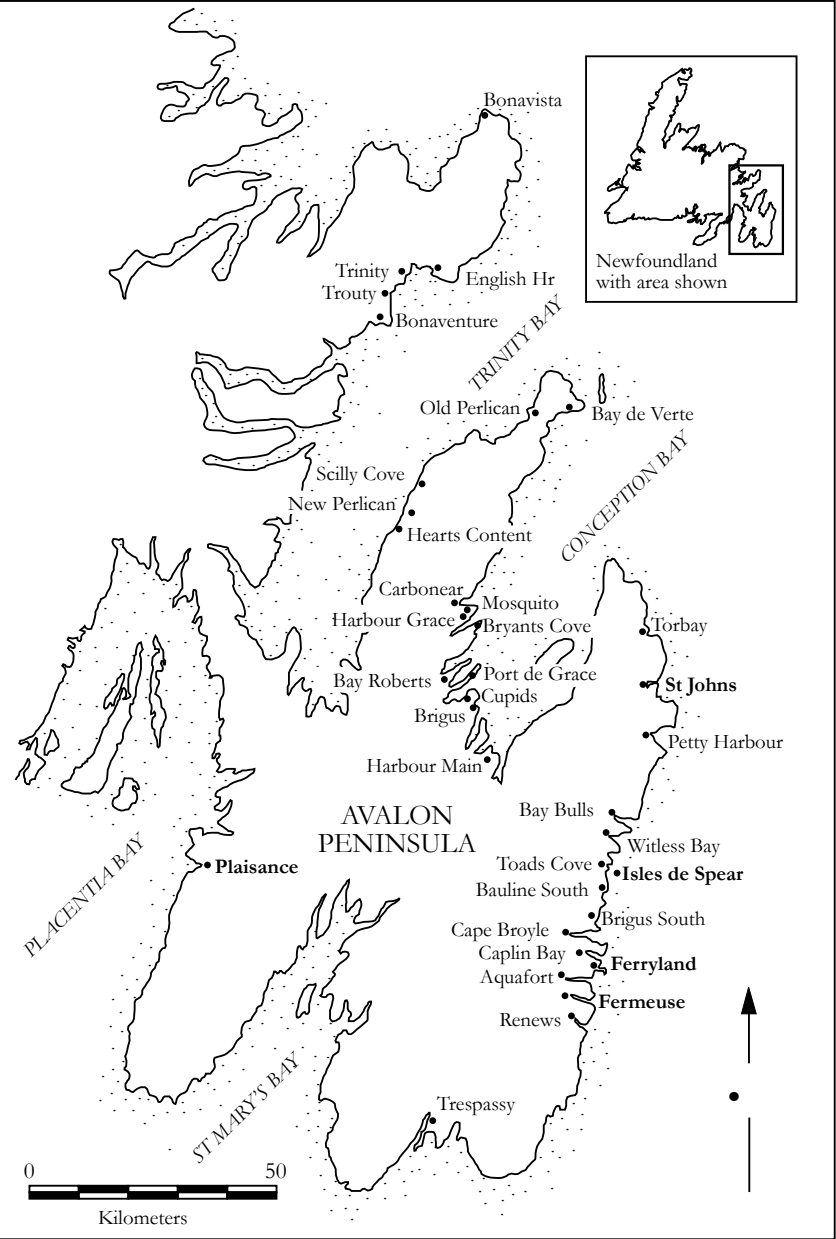
¹² Seary (1971) 27–33; Manoel I (of Portugal), Letter to Diogo Brandā, 15 October 1506, in Quinn (1979) vol. 1, 154.

¹³ J. Rut to Henry VIII (of England), 3 August 1527, in Quinn (1979) vol. 1, 189–90; Quinn (1979) vol 1., 13–20; E. Hayes, 'A report of the voyage and successe thereof, attempted in the year 1563 by Sir Humfrey Gilbert knight...', in Richard Hakluyt, ed. *Principal Navigations* (1589) in Quinn (1979) vol. 4, 23–42.

¹⁴ Abreu-Ferreira (1998); Pope (2004c).

¹⁵ Mannion (1986); Hiller (1996).

Fig. 1. Newfoundland's English Shore, c. 1680, with the French settlement of Plaisance. Places mentioned in the text are in **bold**.



Bretons and Normans with the initial exploration of Newfoundland's south coast, as well as the north-east, as far as Chateau in southern Labrador. This would include the region later known as the Petit Nord, the east coast of Newfoundland's Great Northern Peninsula (figure 2). The toponymy of the Labrador side of the Strait of Belle Isle and that of the Petit Nord both have a strong Breton flavour.¹⁶ The Breton ship *La Jacquette* fished in 'parties de la Terre-Neufve' in 1510.¹⁷ The employ of Breton pilots on fishing voyages to Newfoundland by a Basque vessel (in 1511) and by an English vessel (in 1539) strengthens the perception that the Bretons were precocious transatlantic fishermen.¹⁸ The toponym Cape Breton appeared on maps of North America about 1520.¹⁹ Crignon and others have interpreted this to indicate that Bretons quickly identified cod stocks off northern Nova Scotia, although this was not to be their primary territory in later centuries. (The Basques, who later dominated this fishery, have traditionally claimed that the toponym recalls Cap Breton, in the Bay of Biscay.) Jacques Cartier encountered a Breton crew fishing at St Pierre, off Newfoundland's south coast, in 1535, and Bretons dominated the shore fishery of the nearby Chapeau Rouge (the Burin Peninsula) through the seventeenth century, abandoning it only after 1713.²⁰ About 1580, St Malo merchants began to take an interest in the St Lawrence fur trade, but salt cod was always worth much more to them, as indeed it was to almost every European region involved in early North Atlantic trade.²¹ From 1530 at least, they were also fishing, with the Portuguese and Normans, on the south-east Avalon.²² Archaeological finds of distinctive Breton coarse earthenware vessels, from St Jean la Poterie near the Gulf of Morbihan, suggest regular use of Ferryland's cobble beaches, in the mid sixteenth

¹⁶ Neillon (1996) 156, n. 56; de la Morandière (1962) 226–7. Breton origins are overlooked in Seary (2000).

¹⁷ Louis XII (of France), Pardon to Guillaume Dobel, January 1513, in Quinn (1979) vol. 1, 157–158.

¹⁸ Huxley Barkham (1995); Quinn (1979) vol. 1, 209–14. Documentation of the early modern Breton fishery was reduced by destruction of the St Malo municipal archives in World War II.

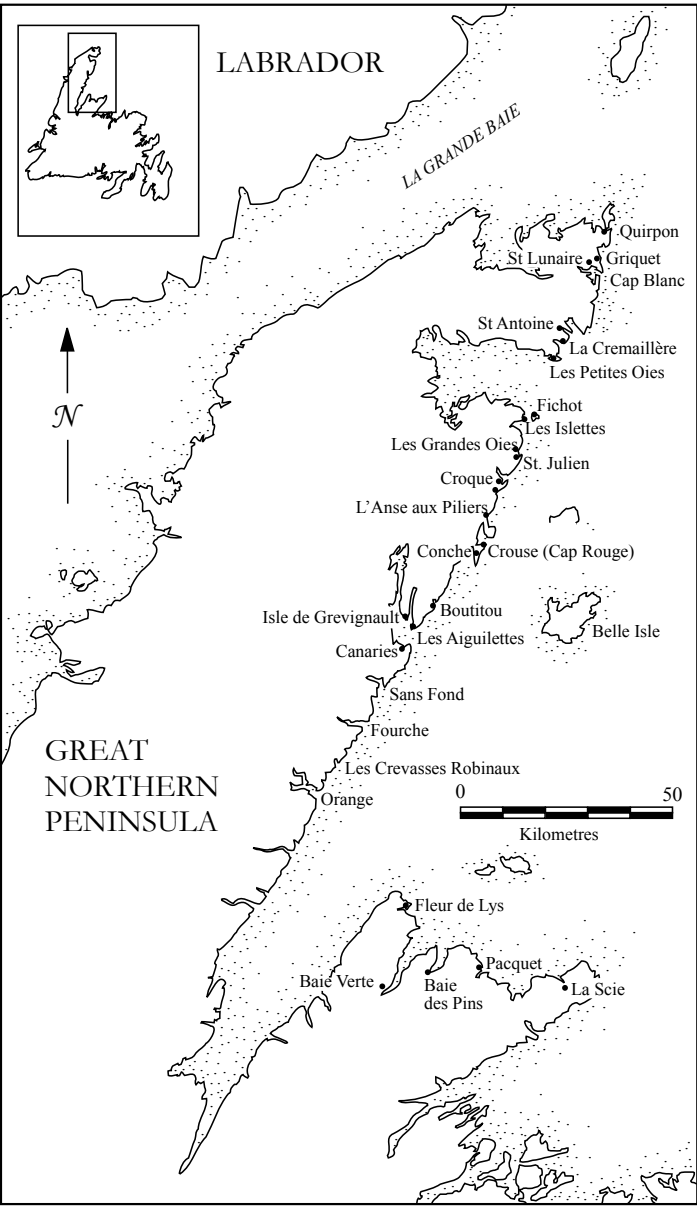
¹⁹ Harisse (1900) plate 8.

²⁰ Cartier (1993) 89; P. Duhamel *et al.* (1662) Reply to the Parlement of Bretagne, 18 April 1662, in 'Extrait du Registre (establi) à l'admirauté de Saint Malo', France, AC, C¹¹C, vol. 1, 6–8v; in NAC microfilm 498; cf. de la Morandière (1962) 424.

²¹ Allaire (1999) 57–77; Turgeon (1995) 220–1; Pope (2003b).

²² Rut to Henry VIII (of England), 3 August 1527, in Quinn (1979) vol. 1, 189–90; W. Butler, Examination in Dolphyn v. Moyne, c. March 1537, in Quinn (1979) vol. 1, 212.

Fig. 2. Newfoundland's Petit Nord, c. 1680.



century.²³ Breton crews were fishing at Crouse on the Petit Nord in 1541, with crews from the French Basque country and Normandy.²⁴ Bretons dominated this productive fishery through the seventeenth and eighteenth centuries, although ships from the Norman port of Granville also regularly visited this area, while the Basques moved elsewhere.²⁵ In the nineteenth century, migratory Breton crews coexisted uneasily with a growing Anglo-Irish settler fishery and abandoned these shores only in 1904, when France relinquished its rights to a seasonal fishery, under the terms of the Entente Cordiale with Britain.²⁶

The Basques fished widely for cod off Europe's own coasts, in medieval times. They can even claim to have lent *bacallao*, their word for cod, to most other western European languages.²⁷ The Island of Bacallaos became a common toponym for Newfoundland in the early sixteenth century. Given how widely the word had already spread in late medieval times, this is as likely to confirm early Portuguese fishing as it is to suggest some kind of Basque precedence. Steady growth in the Basque transatlantic cod fishery is documented through the 1520s and 1530s, and their activities expanded greatly after merchants began to mount specialized whaling and cod-fishing voyages separately in the 1540s.²⁸ The Basques were well-established at Canso in Cape Breton by the 1560s and on Newfoundland's Avalon Peninsula by the time English privateers began a kind of warfare against Spanish and Portuguese fishermen in

²³ Tuck (1996); Pope (2003a).

²⁴ A. de Ubilla, Examinations taken at Fuenterrabia, 23 September 1542, in Cartier (1993) 159–60.

²⁵ 'Arrest de la Cour de Parlement de Bretagne...sur les reglemens du navires et gallays aux partyes de Terre neuve', 31 March 1640, France, AC, F³, vol. 54, 248–51v, in NAC microfilm 564. Published version (St Malo: 1640) in de la Morandière (1962) 390–393; J. Birard *et al.*, Arrest, 4 April 1680, France, AC, C¹¹C, vol. 1, 59–66, in NAC microfilm 498; 'Extrait des declarations des capitaines des navires qui ont été employés en 1764 à la pesche de la morue sur la côte de Terreneuve...', France, Archives des Colonies [hereafter AC], C¹¹F, vol. 3, 270–83v, in National Archives of Canada [hereafter NAC] microfilm F. 521; 'Etat de la pesche de la morue sèche à la côte de Terre neuve pendant l'année 1765', France, AC, C¹¹F, vol. 3, 249–50, in NAC microfilm F. 521; 'Extraits des declarations des capitaines de navires qui ont été employés en 1765 a la pesche de la morue sèche sur la côte de Terreneuve...', France, AC, C¹¹F, vol. 3, 253–69, in NAC microfilm F. 521.; 'Etat des havres propres à des etablissemens pour la pêche de la morüe...', France, AC, C¹¹F, vol. 5, 98–106v, in NAC Microfilm F. 532; Pope (2003c).

²⁶ 'Marine. Pêche de la morue', Archives de la Chambre de Commerce de Bayonne, Carton 17, no. 5, in NAC microfilm F. 862; Hiller (1996).

²⁷ Egaña Goya and Loewen (1995).

²⁸ Huxley Barkham (1995).

the 1580s—a physical pressure which would help dislodge the Iberians from the region by 1620.²⁹ Between about 1540 and 1600, Guipúzcoan Basques prosecuted a major shore-based whale hunt on the Labrador side of the Strait of Belle Isle.³⁰ This industry inevitably familiarized them with the west coast of Newfoundland and the Gulf of St Lawrence, into which they expanded as the sixteenth century wore on. Basque merchants were key players in the early commercial fur trade, which spread up the St Lawrence after about 1580.³¹ They also began whaling in the Gulf, for example at Ile aux Basques, off the mouth of the Saguenay.³² They had by no means abandoned the cod fishery, however. The areas exploited certainly included Gaspé, where the pilot Jean Alphonse met fishermen in 1542 and where a Rochellais ship was documented in 1599, bound with fish for St Jean de Luz or Bilbao.³³ In the seventeenth century, when the south-east coast of the Avalon became a more-or-less exclusively English shore, Basque crews in Newfoundland concentrated their efforts in Placentia Bay, west of the Avalon, and continued to fish in Trinity Bay, at what was then the northern margin of the English Shore.³⁴ They also began to develop fishing stations on the west coast of Newfoundland, notably at Port au Choix and Ferrolle, which French Basques exploited until the closure of the French Shore in 1904.³⁵ The Basque presence in Cape Breton expanded after 1713, when the resident fishermen who had been forced to abandon Plaisance and its outlier settlements in Newfoundland's Placentia Bay established a new French entrepôt at Louisbourg. Besides its military role, Louisbourg became a central place for an expanded shore fishery, dominated by resident and Basque crews. Following the destruction of Louisbourg, these interests shifted again, to the islands of St Pierre and Miquelon, off Newfoundland's south coast, which were restored to France by treaty in 1763.³⁶ Following the diplomatic adjustment of fishing rights in 1713, French crews, among them Basques, had also reoccupied the north shore of the

²⁹ Lescarbot (1618) 362–3; W. Dill, *Examination in Fernandes v. Oughtred*, 1583, in Quinn (1979), vol. 1, 16–7.

³⁰ Huxley Barkham (1987); Proulx (1993).

³¹ Allaire (1999) 57–77.

³² Bélanger (1971); Turgeon (1995).

³³ Lee (1971) 36.

³⁴ de la Morandière (1962) 437; Pope (2004a) 101.

³⁵ Huxley Barkham (1989; 1995).

³⁶ de la Morandière (1962) 731–843.

Gulf of St Lawrence—but this area was closed to them after the British conquest of Canada in 1763.³⁷

Other European regions had more diffuse attachments to North America. John Rut, an English visitor to St John's harbour in 1527, found eleven Norman ships fishing there, with two Portuguese and a single Breton ship.³⁸ Norman crews remained active on the east coast of Newfoundland's Avalon Peninsula, until the establishment of an English Shore, about 1600.³⁹ They were certainly among the early crews fishing off Newfoundland's south coast.⁴⁰ Because the Normandy ports of Dieppe, Fécamp, and Harfleur were relatively close to Paris, as was the regional financial centre of Rouen, the Normans had more of an interest in the production of green cured cod, the wet pickled fish preferred in the capital. It was natural, then, that they would become the dominant participants in the offshore Grand Banks fishery, which produced green cured fish. The banks fishery developed in the second half of the sixteenth century and flourished, with increasing competition, until the collapse of the cod stocks in the 1990s.⁴¹ In the 1580s and 1590s, Norman merchants also developed a trade with what they called *la Floride*, the coast north of Cape Cod, including the area that would become Acadia. Merchants from Rouen mounted fishing expeditions there and into the Gulf of St Lawrence.⁴² Meanwhile, fishing vessels from La Rochelle had preceded Cartier to the Gulf of St Lawrence north shore.⁴³ Bordeaux, La Rochelle and Nantes were major financiers of transatlantic fishing from the early sixteenth century well into the seventeenth, frequently victualling vessels manned by crews from Brittany or the Basque country. The Breton ships *La Catherine* of Binic and *La Marguerite* of Pornic were provisioned at La Rochelle in 1523, for example.⁴⁴ In the seventeenth century, La Rochelle sent its own fishing expeditions to Newfoundland's south coast, Acadia and Gaspé, and provisioned others, but with the development of other Atlantic trades in the eighteenth century, it turned away from the migratory fishery,

³⁷ Neillon (1996) 157–159.

³⁸ Rut to Henry VIII (of England), 3 August 1527, in Quinn (1979) vol. 1, 189–90.

³⁹ Hayes (1589) 'A report...' in Quinn (1979) vol. 4, 23–42.

⁴⁰ Crignon 'Discorso', Quinn (1979) vol. 1, 136–7.

⁴¹ de la Morandière (1962) 317–33, 613–37, 1083–102; Turgeon (1987).

⁴² Turgeon (1995) 224–7; Litalien (1995).

⁴³ Cartier (1993) 9.

⁴⁴ de la Morandière (1962) 248–52; Turgeon (1995 ; 1997); P. Jourdain (1523) Plea, 15 September 1523 in Quinn (1979) vol. 1, 89.

as did Bordeaux and Nantes.⁴⁵ Impossible as it is to track participation consistently, and imprecise as our knowledge therefore remains, shifts in the ethnic patterning of the transatlantic fishery through time are worth observing for what they imply about the economic culture of the industry and, in turn, about how that economic culture affected the maritime cultural landscape of North America.

The landscape of the migratory fishery

'Landscape' is a portmanteau concept, perhaps suspiciously flexible. It carries diffuse connotations, some linked to ecology, some to aesthetic judgments, some to ideas about the social construction of memory, some even to phenomenological reconstruction of the points of view of vanished peoples. Its eclectic capacity commends it to post-modern analysts with a mind to resituate culture and nature. Despite such wear and tear, it remains a key term, because it evokes the enduring dialectic between the physical world and human society.⁴⁶ Landscapes are what humans have made of the world around us and, at the same time, the landscapes that our predecessors have prepared for us are the arenas within which we must, perforce, play our own roles, which will in turn transform the physical context of our lives.

The American archaeologist Maria Zedeño points out that social scientists have used the idea of landscape in two fundamentally different ways.⁴⁷ For many geographers, ecologists and archaeologists, a landscape is a defined space, within which the researcher can situate particular component features or communities. The alternative approach is to start with a particular place, working out its relationship with other places, thus evoking landscape from the inside in a social as well as in a physical sense. Zedeño cogently defends the second approach, emphasizing interpretation of place rather than the classification of space. She introduces the term 'landmark' for a place where human interactions and activities occur—for example, the place where people access a natural resource. (Prehistoric archaeologists in Ireland and Britain have called these 'persistent places'.) For Zedeño, landmarks

⁴⁵ de la Morandière (1962) 301–304; Lee (1971) 36–8; de la Morandière (1969) 27–8.

⁴⁶ Whyte (2002) 7–26.

⁴⁷ Zedeño (2002) 105–8.

are but pages in the history of land use. The whole chapter, to pursue the metaphor, is the landscape, which incorporates the social webs that link people and landmarks over time. This seems to me a simple, direct and yet subtle approach. Landscapes, by this account, have life histories extending for centuries, containing landmarks of various ages and complexity.⁴⁸ These concepts of landmark, landscape and the life histories that link them, are a way to operationalize the suggestive idea of a 'maritime cultural landscape', the term introduced by the Danish marine archaeologist Christer Westerdahl to emphasize the interpenetration and interdependence of land and sea in coastal zones.⁴⁹ For coastal history and archaeology, this seems more precise than the term 'seascape' used by the Irish archaeologist, Gabriel Cooney, although the latter has the virtue of suggesting that a perspective on the land from the point of view of the sea may be more important than the reverse.⁵⁰ The objective of recognizing and describing maritime cultural landscapes is now widely understood.⁵¹ The idea of landscape as an evolving web of landmarks and people is a promising approach to achieving this important descriptive goal.

Participant-observers in the early modern transatlantic fishery, including Richard Whitbourne, James Yonge and Nicolas Denys suggest that the fundamental geographical unit in this industry was the *fishing room*.⁵² From the regional point of view, each fishing room was a persistent place, or in Zedeño's terms, a landmark. These were the shore establishments necessary for splitting, salting and drying cod caught in daily voyages by boat crews working for a particular fishing master. In order to assess the impact of the migratory fishery on the North American environment, we need to understand both the component features of fishing rooms as persistent places and their distribution in the wider maritime cultural landscape. Migratory fishermen are notoriously supposed to leave but faint traces.⁵³ Survival and visibility of archaeological features depends, though, on the extent of later occupations. Since Canada's Atlantic coast is, for the most part, not densely settled,

⁴⁸ Zedeño (2002) 110.

⁴⁹ Westerdahl (1992).

⁵⁰ Cooney (2003).

⁵¹ E.g. Alanen (2000); Vollmer *et al.* (2001); McErlean (2002).

⁵² Whitbourne (1622) 130–133; Yonge (1963) 52–73, 110–122; Denys (1672) 55–172; cf. Duhamel du Monceau (1769) vol. 2; de la Morandière (1962) 161–170; Mannion and Head (1987); Pope (2004a) 319–333.

⁵³ Faulkner (1985).

archaeologists have had the chance to uncover interpretable remains in several provinces.⁵⁴ Official fisheries' censuses and surveys are another important source of information, beginning in the later seventeenth century.⁵⁵ Maps and plans showing the situation of certain French and English fishing rooms also survive from this period, while French draftsmen recorded their fishing stations with increasing detail in the later eighteenth and nineteenth centuries.⁵⁶ The Newfoundland fisheries are among the best-documented, particularly the English Shore and the Petit Nord. These will be the focus of this essay, with the hope that attention to them will clarify issues with wider relevance to the North American Atlantic littoral, particularly the Canadian coasts of Cape Breton, in Nova Scotia, and Gaspé, in Quebec.⁵⁷ In the 1850s, Paul-Émile Miot's innovative industrial photography created an invaluable record of French migratory fishing establishments on Newfoundland's later, diplomatically-defined, French Shore.⁵⁸ Miot provides another useful perspective on the maritime cultural landscape of Newfoundland, as the transatlantic shore-based migratory fishery drew to its close.

Physically, then, what was a fishing room? To land their catches, boat crews used a fishing stage (in French *chaufaud* or *échaufaud*), a rough wooden wharf with an enclosure against the weather at its seaward end.⁵⁹ The archaeological signature of these structures is normally, at best, a concentration of ballast boulders in the tidal zone, what Newfoundlanders call the 'landwash'. Once cod was split, washed and salted, shore crews needed a place to spread the fish out to dry. Sixteenth-century Breton, Basque and Portuguese crews used cobble beaches called *graves* in French or *galets*, by the Bretons. These were often natural but sometimes anthropogenic, consisting of a cobble pavement on peat or, in northern Newfoundland and Labrador, where the land is still rebounding from the last ice age, of ancient raised cobble beaches from which the vegetation was stripped.⁶⁰ Galets were sometimes improved

⁵⁴ E.g. Ferguson (1980); Pope (2004c). Quebec's archaeologists have tended to focus on early resident fisheries, e.g. Blanchette (1977); Nadon (2004); but see Neillon (1990).

⁵⁵ Pope (2006).

⁵⁶ Pope (2004a), 333–6; Tompkins (2004).

⁵⁷ Cf. de la Morandière (1962) 345–84; Balcom (1984); Lee (1971).

⁵⁸ Wilkshire (2005).

⁵⁹ Pocius (1992). On the vocabulary of the French fishery, see de la Morandière (1962) 1375–83; for the English fishery, see Pope (2004a) 21–9, 439–43.

⁶⁰ There are natural cobble beaches at Ferryland and Long Point (Crouse); possible cobble pavements at Clear Cove (Fermeuse) and Boutitout, and stripped vegetation at

with a layer of fir boughs, as *rances*. West-Country fishermen on the seventeenth- and eighteenth-century English Shore preferred to dry their fish on flakes, rough wooden platforms covered with boughs. By the mid seventeenth century, the Bretons and Basques were also using flakes (*vignaux*) to expand drying capacity.⁶¹ These permitted exploitation of rougher terrain; although paradoxically flakes, galets and rances were all preferentially situated in somewhat damp locations, in order to moderate the curing process. In any case, drying space was the major requirement of a productive fishing room. Fishermen also used wooden vats and strainers of fir boughs to reduce cod livers into train oil, an important secondary product of the industry. An archaeological example identified on the St John's waterfront suggests that these were located close to the shore, near the fishing stages where the fish were eviscerated.⁶² These various structures are evident in eighteenth-century plans and in Miot's nineteenth-century photographs.⁶³ A preliminary archaeological reconnaissance of the Petit Nord, the heart of Newfoundland's traditional French Shore, indicates that the most visible landscape traces of the migratory fishery are the galets and the carefully constructed walkways and ramps that connect work areas.⁶⁴

Fishing rooms were not merely sites of production. Crews lived for months close to their work. They not only caught and dried fish; they ate it, slept over it, prayed for it, and no doubt sometimes cursed it. Our archaeological survey of the Petit Nord also identified the rock foundations of the cook-rooms, where crews were fed, and the occasional faint traces of smaller cabins, which may have housed higher-status workers. Bread-ovens are still visible on many abandoned fishing rooms; these are specifically French features, which do not seem to predate the mid-eighteenth century.⁶⁵ With a footprint of about 3 × 3 m these are larger than the traditional household bread-ovens, well-known in Quebec, and about the size of the communal bread-ovens which still stand, abandoned, in parts of rural France.⁶⁶ Another distinctive feature of

Northeast Crouse; see Pope (2003d; 2005) On sea level changes see Bell and Renouf (2003).

⁶¹ Denys (1672) 111–4.

⁶² Pope (2004c).

⁶³ Tompkins (2004).

⁶⁴ Pope (2005).

⁶⁵ Renouf *et al.* (2004) ; Pope (2005).

⁶⁶ E.g. at Malansac, Ille-et-Vilaine, Brittany.

French fishing rooms are the crosses or *calvaires*, frequently mentioned as landmarks in seventeenth- and eighteenth-century surveys.⁶⁷ They are generally sited on ancient raised beaches, looking down from inland on the work areas below. Thanks to repairs by the French navy in the 1930s, some still stand, preserving a traditional ritual perspective within the fishing room.⁶⁸

The complex configuration of features apparent within fishing rooms suggests that they were themselves, in their own way, landscapes. We can certainly read them as landmarks or persistent places, within the context of a harbour with several fishing rooms or, indeed, within the wider context of the whole Petit Nord. At the same time though, each fishing room was an arrangement of more finely-grained features—*chaufauds*, *galets*, cookrooms, bread-ovens, crosses and so on—and each of these was a landmark within the miniature landscape of the fishing room. The relationship of landscape and landmark can usefully be thought of as recursive. Landscapes of different scales can be nested, one within another, so that a landscape at one level is potentially a landmark, taking a broader view. Perhaps this does not always apply; but it does seem to fit the maritime cultural landscape of the transatlantic migratory fishery. Applying the recursion, we might consider rooms, harbours and whole fishing zones (like the Petit Nord or the English Shore) as landmarks within ever wider maritime cultural landscapes: edges, at different scales, of the same sea. A multi-scale approach to the migratory fishery raises many questions.⁶⁹ Two important issues are worth examining here, because they offer an approach to the deceptively simple fundamental question of how European fishermen shaped the North American landscape. How were fishing rooms distributed? And why did the known ethnic aggregations of fishermen develop (the English on the Avalon, the Bretons on the Petit Nord, the Basques on the west coast, and so on)?

⁶⁷ Pope (2003c).

⁶⁸ For example, at Dos de Cheval (Crouse) and Northeast Crouse; see Pope (2005).

⁶⁹ On the need for multi-scale approaches to landscape, see Marquardt and Crumley (1987).

The distribution of fishing rooms

Two intersecting aspects of the vernacular organization of the transatlantic fishery had a powerful effect on the distribution of fishing rooms. Like other vernacular industries, the migratory fishery was organized by the calendar: constrained by nature to an annual rhythm. At the same time, the managerial style of proto-industrial vernacular capitalism was indirect; decisions about where crews would fish were made by fishing masters themselves, in the field, as it were. One should recall that migratory fishing rooms were not owned. When settler fisheries developed, in Newfoundland, Cape Breton and Gaspé, continued open access to traditional fishing rooms became an important issue to migratory fishermen. At times, regional seigneurs attempted to control rooms, for example during Sir David Kirke's tenure on the Avalon in the 1640s and by Quebec merchants in Gaspé, in the later seventeenth century.⁷⁰ Metropolitan governments, sensitive to the mercantile clout of migratory fishing interests, tended to override such local or regional attempts at enclosure and to defend traditional open access to fishing rooms, or at least some fishing rooms.⁷¹ In 1815, when the fishermen of St Brieuc, St Malo and Granville returned to the Petit Nord after the hiatus of the Napoleonic Wars, they abandoned this principle and adopted a system of allocating rooms by lot, for a five-year period.⁷² This shift in the ground rules of the fishery must certainly have changed the attitude of French migratory crews to medium-term investment in what were now, at least in a limited sense, their rooms. Until this shift, however, the transatlantic fishery was an open-access industry. Crews therefore needed a mechanism for the annual allocation of fishing rooms. Traditionally, the *admiral* or fishing master first arriving at a particular station had first choice of shore space.⁷³ This simple economic custom provides a plausible explanation for the succession of fishermen of

⁷⁰ Pope (2004a) 72; Lee (1971) 40–1.

⁷¹ That is, European governments preferred to encourage fishing merchants operating out of their own ports than to encourage new rivals based in North American colonies. See Innis (1954) 134.

⁷² de la Morandière (1966) 1105.

⁷³ de la Morandière (1962) 390–7; Pope (2004a) 257, 440. Within specific ethnic groups customs were more complex—a variation which deserves more study. In the meantime, the rule of thumb above is a fair summary, particularly for interactions between ethnic groups.

different ethnic origins, evident in the archaeological record of sixteenth- and seventeenth-century Newfoundland.

The eventual distribution of fishing crews—Breton, Basque, Norman, West-Country or Irish—can be most economically explained by considering the proximity of the various competing European regions to the North American resource.⁷⁴ The first-come, first-served, admiral system meant that proximity to Newfoundland permitted preferential access to the resource. Those who had to sail farther to cross the Atlantic each season, just to reach Newfoundland, tended to end up fishing even farther from home. Those who had to come the farthest to reach the island often found themselves exploiting its most distant coasts. West Country fishermen were able to rapidly replace their Portuguese, Basque, Breton and Norman competitors on the eastern Avalon, at the end of the sixteenth century, in part because they were several days sailing closer to these rich fishing grounds. The Royal Navy's fishery censuses of the later seventeenth century suggest that the same principle also explains the distribution of effort within the British fishery. English ports arranged in order of their sailing distance from Newfoundland are strongly linked with Newfoundland harbours arranged in order from the south, the region reached first, following the usual Atlantic itinerary.⁷⁵ Over time, as a result of the admiral system, fishermen from specific European regions came to dominate particular parts of the Newfoundland coast—notably West Country and Irish crews on the Avalon Peninsula, nearest to Europe; Breton crews on the Petit Nord, on the north-east coast; and, finally, the Basques, in the Gulf of Saint Lawrence to the west. To observe the insistent force of economic custom does not mean we cannot admit that war and diplomacy also shaped the ethnic landscape of the fisheries. Politics is, of course, a two way street and the economic stake that fishermen of particular origins developed in particular Newfoundland regions also, surely, affected diplomacy and war. Scholars of the long-term history of the fisheries have also noted that medium-term variations in catch rates, perhaps induced by climate fluctuation, seem to have precipitated shifts in the geographical distribution of fishing effort.⁷⁶ Again, accepting this kind of medium-term variability does not mean we have to abandon the principle proposed

⁷⁴ Pope (2003a).

⁷⁵ Pope (2004a) 146–7.

⁷⁶ Brière (1979); Turgeon (1981).

here, that links fishermen short-term decision-making with the way crews of different geographical origins ended up, in the long term, arrayed on the maritime cultural landscape. The custom of the fishery provoked a race to claim fishing rooms. The eventual distribution of fishing effort may not have been inevitable, but it is quite consistent with the origins of the contestants, who started at varying distances from the finish line.

Significant numbers of fishermen arrived seasonally in Newfoundland: likely 15,000–18,000, in the later seventeenth century (5,000–6,000 British and 10,000–12,000 from the various provinces of France).⁷⁷ Their visits were, however, focused sharply on relatively few fishing stations: in the order of one hundred, at this time. In whatever way fishermen of various origins sorted themselves along the Atlantic littoral, they impinged on only a small fraction of Newfoundland's land mass. Each summer, cod congregated on the Newfoundland coast, where the Labrador Current creates nutrient-rich upwellings, at promontories, shoals and islands.⁷⁸ The marine areas exploited by early modern fishermen represent a significant part of that coast, perhaps ten or even twenty percent of it. The practice of bringing fish back to fishing rooms for processing meant, however, that relatively small shore stations could serve wider stretches of coast, as far as the crew of a fishing shallop could conveniently sail or row, to and fro, in a day—say something like ten km.⁷⁹ Thus European migratory fishermen did not exploit a thousandth part of the island's surface, nor even a thousandth part of the landward aspect of its shores. This concentration of migratory crews ashore constrained and directed the impact European fishermen had on Newfoundland.

The concentration of European effort tended to minimize conflict with Native peoples. The Beothuk, the Amerindian aboriginals of the island of Newfoundland, were never numerous. With a pre-contact population in the order of 500 to 1000, scattered in several bands on the northeast, west and south coasts, they were so outnumbered during the fishing season that they had every incentive either to trade amicably with Europeans or to avoid them entirely.⁸⁰ These were, in fact, the

⁷⁷ Pope (2006); de la Morandière (1969) 28–31, makes a somewhat lower estimate.

⁷⁸ Pope (2004a) 24.

⁷⁹ Recall that the migratory inshore salt-cod fishery at Newfoundland was prosecuted from boats not ships.

⁸⁰ Marshall (1996) 282–283 on population figures.

strategies the Beothuk adopted, one after the other. Although they had often traded in the sixteenth century, they avoided Europeans in the seventeenth and eighteenth centuries, as they became more dependent on scavenging at seasonally abandoned fishing rooms.⁸¹ The strategy of avoidance and scavenging was only possible because migratory fishermen were concentrated in a few seasonally abandoned locations. The Beothuk strategy broke down when English fishermen began to settle the northeast coast permanently. The Innu (Montagnais), an Amerindian people from southern Labrador, including the St Lawrence north shore, also exploited northern Newfoundland; just as the Mi'kmaq people, originally from the Atlantic Canadian mainland, used the south and west coasts of the island. Both had long experience interacting with Europeans and both developed friendly relations, involving informal trade, with migratory French fishermen in Newfoundland.⁸² Neither Beothuk, Innu nor Mi'kmaq depended on cod, let alone salt cod, which is to say they had little to lose and much to gain from the seasonal presence of European crews, at a few coastal fishing rooms.⁸³ That they sometimes shared the same harbours, on the French Shore, is attested not only by archaeological finds but also by the toponymy of the fishing rooms, which in 1680 included 'la pointe aux Sauvaiges' near St Anthony and 'lanse est Sauvaige' at St Julien.⁸⁴ Our 2004 archaeological survey identified a large unifacial flake tool at Grandois, roughly worked of European ballast flint. The only Native group regularly in conflict with migratory fishermen were the Inuit, a neo-Eskimo people who expanded their territory down the coast of Labrador in the sixteenth century and became regular visitors to northern Newfoundland in the seventeenth and eighteenth centuries.⁸⁵ As early as 1610, Breton fishermen reported conflicts on the Petit Nord. For example, a small fleet of 'deux barques et six pirogues' (two shallops and six kayaks?) attacked a well-armed merchantman at Boutitou in 1693.⁸⁶ The origins of Euro-Inuit conflict are unclear but might have to do with the simultaneous expansion of both parties into the same new territory or, perhaps, represented a hostile

⁸¹ Pastore (1989).

⁸² Neillon (1996); Martijn (2003).

⁸³ Possible exceptions to this generalization would be cod fishing rooms near salmon rivers.

⁸⁴ Birard, *et al.*, Arrest, 4 April 1680, France, AC, C¹C, vol. 1, 59–66, in NAC microfilm 498.

⁸⁵ de la Morandière (1962) 385–90; Martijn (1980); Martijn and Dorais (2001).

⁸⁶ de la Morandière (1962) 388–90.

reaction to the generally friendly relations with Europeans developed by the Innu, the Inuits' competitors in southern Labrador. Eventually, by the later eighteenth century, small-scale commercial relations with the Inuit came to resemble more closely those with other Native groups.

Concentration of seasonal European activity had a second result: it created intense competitive pressure among fishermen, for rooms. In Newfoundland's traditional historiography this has often been over-specified as competition between settlers and migratory crews. The interests of planter fishermen and migratory fishing admiral were certainly in conflict in this sense (even if they over-lapped in others) but all fishermen needed fishing rooms and contemporaries noted competition for shore space most often among migratory crews, both English and French (if not between English and French).⁸⁷ Despite Newfoundland's size—its dimensions are those of England and Wales together—seasonal visitors did not have a wide choice of fishing rooms.⁸⁸ Much of the island's coast is steep or rocky or both and where it is not, as on the west coast, cod are more elusive. The combination of features that make a workable fishing room is actually rare: a safe place to moor or careen a ship, protected water for landing boats, proximity to reliable fishing grounds, accessible bait species, wood for stages and flakes, open areas for drying and, finally, fresh water for the crew. That fishing rooms were at a premium is clear simply from the care seventeenth- and eighteenth-century colonial administrations took to have them enumerated. That the number of rooms was finite is clear from the course of expansion in the late seventeenth, eighteenth and nineteenth centuries. Generally speaking, the number of men and boats using particular fishing harbours expanded only moderately; that is to say, the number of fishing rooms in any one harbour was, typically, limited. When expansion came, it came with the development of new harbours, previously unused, for one reason or another.⁸⁹

Europe's migratory crews were not simply large-scale predators of cod. These were shore-based fishermen and they soon entered into a complex interaction with local ecosystems, because they needed bait for their lines. They might use herring, capelin or squid, all of which could be caught, in the right season, inshore. Early in the season, fishermen

⁸⁷ Pope (2004a) 71; N. Troute (1678) Deposition, 1 February 1678, Great Britain, PRO, CO 1/42 (22), 58–9; de la Morandière (1962) 390.

⁸⁸ Litalien (1995) is over-optimistic about choice of fishing rooms and lack of conflict.

⁸⁹ de la Morandière (1969) 36–7; Neillon (1996); Pope (2006).

often preferred to use nesting sea-birds, or their chicks. Fishermen's use of the great auk from the Funk Islands off northern Newfoundland is fairly well known: in 1534, Cartier and his men took several barrels for food.⁹⁰ Fishing crews could also use such plentiful and easily procured meat as bait. Their preferred seasonal stations were often adjacent to sea-bird colonies. An early seventeenth-century complaint about planter fishermen by migratory interests accustomed to using Baccalieu Island (today a provincial seabird reserve) suggests no shortage of cod but rather a perceived shortage of petrels, puffins and murre to use as bait.⁹¹ By 1600, human predation on marine animals along the coasts of Newfoundland was already a complex business, involving several local species of birds, as well as fish and exploitation of the coastline between fishing stations.

Although the maritime cultural landscape of the migratory cod fishery on the English Shore is obscured by centuries of permanent settlement, it is still visible archaeologically, for example at Fermeuse. The Plymouth diarist James Yonge worked there as a ship's surgeon in 1663.⁹² His map of Fermeuse Bay gives us a view from the sea (figure 3).⁹³ Fishermen of the period had little use for Riverhead, the site of the modern town of Fermeuse. Planters and migratory crews alike situated themselves in protected waters, yet within reasonable access to the open sea, at places where boats can land safely and wood and water are accessible. Archaeological reconnaissance confirms this distribution of early fishing rooms around the harbour, and suggests that second-rate rooms, where landing was difficult and water scarcer, were occupied only later, in the eighteenth and nineteenth centuries.⁹⁴ Admiral's Place (today Port Kirwan) is still an active base for the fishery and each of the fishing rooms mapped by Yonge remains a cleared open cultural area within a generally wooded landscape. To the extent that specific features of the early fishery survive, they do so overlain by centuries of permanent settlement and all that has entailed: livestock agriculture, gardens, cemeteries and eventually roads, ditches and modern homes, not to mention electrical, telephone, water and sewage lines. In northern

⁹⁰ Cartier (1993) 4–5.

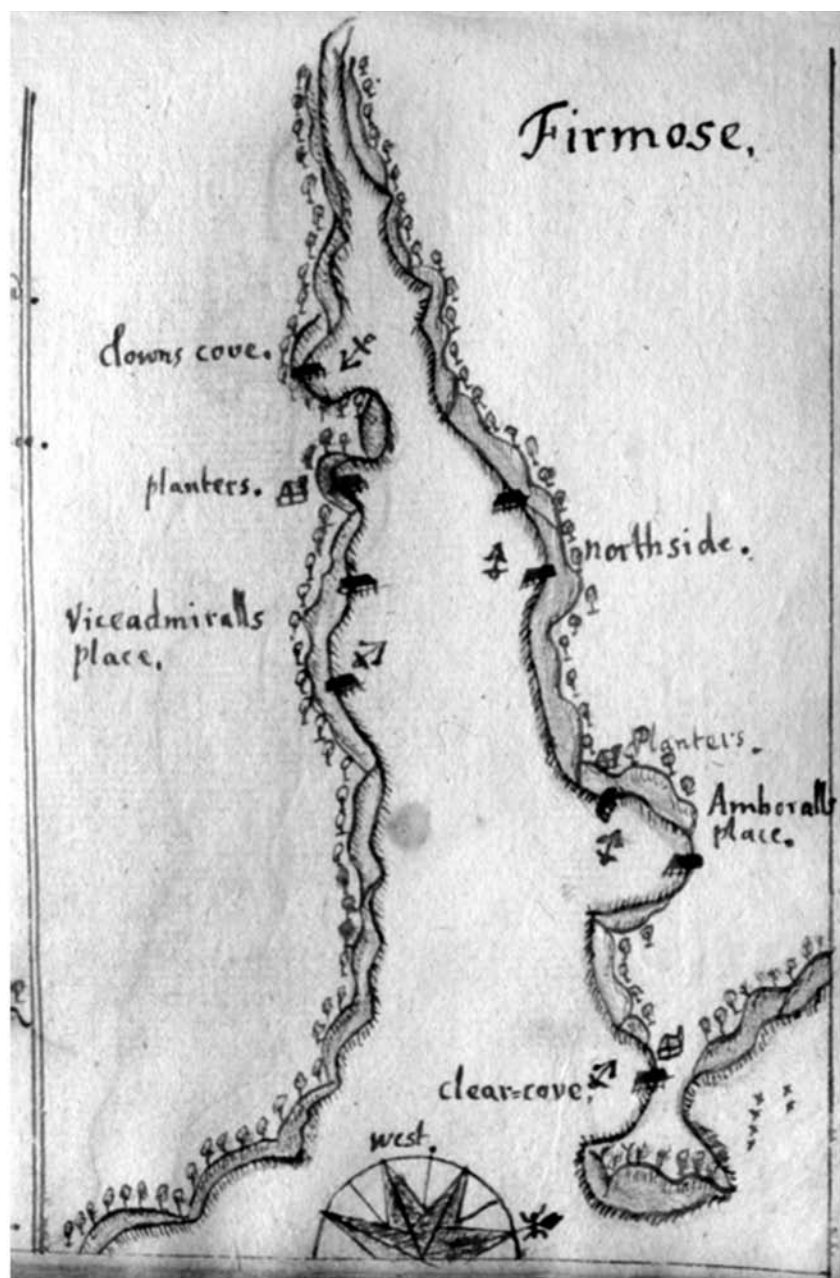
⁹¹ Petition, c. 1618, Devon Record Office, Exeter, DD 61814, 1.

⁹² Yonge (1969) 52–73.

⁹³ Yonge, J. (1663a) 'Firmose', ms. map, in 'Journal', Plymouth Athenaeum, Plymouth, Devon.

⁹⁴ Pope (2003d).

Fig. 3. James Yonge, "Firmose" [Fermeuse], c. 1663. Courtesy Plymouth Athenaeum, Plymouth, Devon.



Newfoundland, on the other hand, there are many fishing rooms, longer used in a strictly migratory fishery, abandoned more recently and less heavily overwritten by the heavy hand of the twentieth century.

Fishing rooms were arrayed in a similar way on the Petit Nord, although where extensive galets reduced the need for investment in wooden flakes, proximity to forest was perhaps less important. Within the large harbours of this coast, including Griquet, Quirpon, St Anthony, Fichot, St Julien, Croque, Crouse, Conche, Englee, Fleur de Lys and La Scie, fishing rooms were scattered in much the same way that they were around south Avalon harbours like Fermeuse. A map of Croque in 1767 shows stages and galets, not only at the site of the modern day town (Épine Cadoret) but also in four other coves around the harbour: le Fond, Genille, Groux, and what is now Southwest Croque, at that time an administrative hub of the French fishery (figure 4).⁹⁵ Archaeological reconnaissance has re-identified these fishing stations and demonstrated that the pattern of fishing rooms remains visible, in physical changes to the cultural landscape wrought by migratory Breton fishermen through four centuries, before they surrendered their landmarks to Anglo-Irish *livyers* in 1904.⁹⁶ This is not to imply that the present inhabitants of the Northern Peninsula or their grandparents have not also left their mark on the maritime cultural landscape. Settler populations are small, however, and many sites were abandoned after Newfoundland's confederation with Canada in 1949. Furthermore, the small settlements of the region actually grew within the matrix of the former French migratory fishery. The original settler of virtually every one of these small communities was an over-wintering caretaker or *gardien*, often of Irish origin.⁹⁷ (After 1713, the French themselves were forbidden by treaty from over-wintering.)⁹⁸ On abandoned fishing rooms, generations of practical changes to the landscape are still visible, ranging from cleared galets, to stone-reinforced ramps and walkways and even, at Southwest Croque, to a sluice drainage system through a

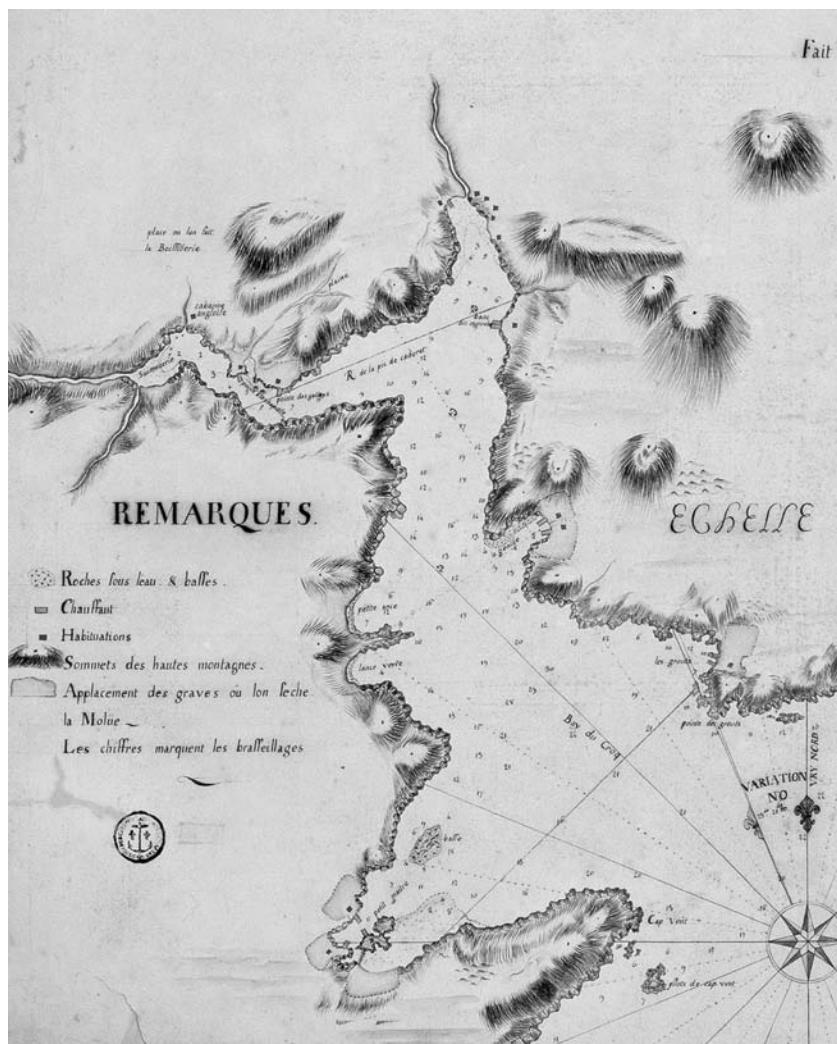
⁹⁵ C. Latiolais (1767) 'Côtes du Petit Nord, plan de la bay du Croq & des Saints Juliens de puis Cap Vent jus qu'au Grandes Oyes', ms map, France, Bibliothèque Nationale, Cartes et Plans, S.H. (18^{ième}): pf. 129, div. 3, pièce 1(1) in Tompkins (2004) 13.

⁹⁶ Pope (2005).

⁹⁷ Romkey (2003).

⁹⁸ Hiller (1996).

Fig. 4. Coquelin Latiolais, "Côtes du Petit Nord, plan de la Bay du Croq..." 1767. France, Bibliothèque Nationale, Cartes et Plans, S.H. (18ème): pf. 129, div. 3, pièce 1(1). The map shows fishing stages and galets (clockwise from top left) at Épine Cadoret, le Fond, Genille, Groux and "Petit Maître" (Southwest Croque).



galet, presumably for keeping it drier in wet weather. These changes all permanently increased the value of the site, as a fishing room.⁹⁹

Conclusion: Land, labour and the limits of impact

The dry salt-cod fishery was labour intensive, requiring more man-hours per tonne of output than the green fishery of the Grand Banks. Throughout the sixteenth century and much of the seventeenth, a substantial crew was an advantage too, if a cargo was to be carried to the best markets for dry cod, in Iberia or the Mediterranean. Large crews were not needed to handle the ship itself (in the eighteenth century this was done with much smaller crews), but to defend it against the pirates that still plagued the waters inside the Straits of Gibraltar.¹⁰⁰ We must acknowledge, then, the strong demand for labour for the early transatlantic salt-cod fishery. Fishing masters recruited migratory crews in Europe, however, and there is little evidence that masters normally had much trouble assembling crews at the customary rates. For several centuries, at least, a steady stream of rural lads from the hinterlands of the Basque, Breton, or West Country ports were all too happy to enter an industry that offered a relatively substantial diet, a cash payout, a new set of clothes and, in effect, an apprenticeship.¹⁰¹ So despite the substantial labour force required by the transatlantic dry salt-cod fishery, the major constraint on this industry was not recruitment but access to fishing rooms. This situation inverts or at least moderates the usual North American historiographic equation, in which land is assumed to have been plentiful and labour scarce.¹⁰² In one respect, the case of the migratory fishery is simply an exception which proves a rule, for the labour in question was recruited in Europe to be put to work in America, thus providing an unusual but unproblematic illustration of the traditional view about where labour was scarce. The revisionist point argued here should be put more precisely: useful land was not plentiful in Newfoundland, as it is supposed to have been in most of

⁹⁹ Deterioration of the landscape is harder to assess, although it is possible that repeated cutting and occasional fires have reduced forest cover in some places.

¹⁰⁰ Davis (1961); Pope (2004a) 167–8.

¹⁰¹ de la Morandière (1962) 95–125; (1969) 29; Cabantous (1987); Handcock (1989) 53–70; Uriartu (1995); Pope (2004a) 161–93.

¹⁰² E.g. in Vickers (1994).

North America.¹⁰³ This scarcity of land may shed light, not only on the environmental implications of the migratory salt-cod fishery but also on the role of certain European port towns in the appropriation of north-eastern North America.

The economic culture of the transatlantic fishery channelled competition among migratory crews and, in the long term, scattered fishermen from particular European regions in a specific array across the Atlantic Canadian maritime cultural landscape. The complex needs of the shore-based salt-cod fishery put a significant premium on intimate knowledge of the resources of particular fishing rooms and therefore strongly encouraged crews from each specific European port to return to the North American fishing stations that they already knew. The notoriously intense competition within the dry fishery for preferred shore spaces provided a strong incentive for ethnic clustering. Widespread acceptance of the first-come, first-served admiral system generally restrained conflict among competing crews, even those from European regions.¹⁰⁴ But the coasts of the New World were far from the authority of the Old and, in this situation, fishing crews were most comfortable and most secure working among neighbours from home, if not among kin. The value given to being able to return to the same fishing room, or at least one close by, led eventually to the employment of over-wintering caretakers. This seems to have been one of the ways informal settlement crystallized on the seventeenth-century English Shore and it was certainly the origin of settlement on the Petit Nord in the later eighteenth and early nineteenth centuries.¹⁰⁵ In both cases, an effective tactic for securing particular fishing rooms turned out to be a bad long-term strategy: within a generation, caretakers became settlers and Newfoundland settlers inevitably wanted fishing rooms themselves.

The fact that some European regions were closer to the North American fishing resource than others appears to have shaped the final ethnic pattern of the fishing periphery. In Newfoundland, the relative proximity of West Country crews would have been an advantage in their struggle to wrest control over the North American coast closest to Europe. The Bretons, with a few days extra sailing to cross the Atlantic, would concentrate on the Petit Nord, to the north and west. The Basques eventually

¹⁰³ Cf. Pope (2004a) 420.

¹⁰⁴ Pope (in press b).

¹⁰⁵ On the English Shore, see Pope (1993); (2004a) 65–78.

fished on Newfoundland's west coast. Spatial patterning on this principle is visible at a finer scale within the English Shore itself: North Devon dominating the southeast Avalon; Dartmouth and Plymouth, the central coast around St John's; Poole, Trinity Bay; and the more distant British ports, even farther afield. Whether a parallel vernacular pattern existed on the Petit Nord is an open question, answerable archaeologically, perhaps, as we identify Breton coarse earthenwares from sites on this coast. Whatever finer details of the geography of the fishery remain to be unearthed, we already know enough to conclude that the economic culture of this industry concentrated fishing effort, routinized destinations and, in the end, helped determine where transatlantic fishermen of various European regions would catch and dry their cod.

Fishermen from specific European ports developed intimate, if evolving, relationships with specific Atlantic Canadian coastal landscapes. In the 1660s, for example, fishing crews from the North Devon port of Barnstaple strongly preferred to fish in the south-east Avalon, at Fermeuse.¹⁰⁶ Yonge's maps of this and a few other harbours on the English Shore give us some sense of what Devon fishermen and their predecessors made of these landscapes. (His map of nearby Renews shows, among other places, a 'Biscayan Cove'.)¹⁰⁷ Seventeenth-century Breton surveys of the Petit Nord give an even more vivid sense of these landscapes.¹⁰⁸ Besides the various *calvaires* and *magdelaines*, we read of several *bancs aux bateaux*, *pointes aux ancres* and *anses aux ours*. The toponym 'bank of the flies' turns up in several harbours, a reminder of one of the less attractive aspects of summer on this coast. Was the name of Croque's *Havre du petit maistre* a fisherman's joke, given that 'petit maître' was slang for a black fly? Fichot had a fishing room called *Coupe soulier*, certainly a rocky place not very footwear-friendly, as well as another room, not the most productive, called *Banc de la grande pauvreté*. The cultural content of these toponyms is but one suggestive aspect of the contemporary surveys of the Petit Nord. They are also an index to the distribution of fishing effort and can be read as a key to the internal landscape of each fishing station described, not only as a place for resource extraction but also within a sacred perspective.

¹⁰⁶ Yonge (1963) 56.

¹⁰⁷ J. Yonge (1663b) 'Renoozé', ms. map, in 'Journall', Plymouth Athenaeum, Plymouth, Devon; Pope (2004a) 334.

¹⁰⁸ Birard *et al.* (1680) Arrest, 4 April 1680, France, AC, C¹C, vol. 1, 59–66, in NAC microfilm 498.

For two or three centuries, the Petit Nord was a remarkably stable maritime cultural landscape. The English Shore was somewhat less stable, precisely to the extent that permanent settlement came earlier there. In both cases, the existing landscape was certainly altered soon after Europeans arrived in the sixteenth century—but within restricted limits. The local marine ecology underwent an initial shift as large marine mammals, the walrus and the right whale, were rapidly eliminated.¹⁰⁹ Fishermen may also have put serious pressure on some sea-bird species, although avian population shifts are difficult to pin down until major nineteenth century collapses, like the extinction of the great auk. By the late seventeenth century, strong fluctuations in catch and participation rates suggest that fishermen had begun to affect local cod stocks, although by no means to the disastrous degree achieved across the whole northwest Atlantic by their successors, with electronic fish-finding equipment, in the late twentieth century.¹¹⁰ The continued long-term productivity of the early-modern, shore-based, migratory fishery in the key production zones of Atlantic Canada, strongly suggests that this industry was, in some important sense, in balance with both marine and land resources. Wood and water were significant land inputs to the transatlantic shore fishery but there was usually more than enough of both. Little evidence survives of over-exploitation of either. Because fishing rooms represented a very small fraction of the Newfoundland landscape as a whole, negative impact on Native peoples was minimal—that is, until the spread of settlement and year-round occupation of the coast. Although fishing rooms were, in effect, European bridgeheads, as long as settlement remained only a future possibility, they presented the Beothuk and other Native peoples an opportunity rather than a cost.

The maritime cultural landscapes that migratory fishermen created in Atlantic Canada had a specific use and therefore a specific form. In their landward aspect, at least, the maritime cultural landscapes of Atlantic Canada were limited and intermittent (both spatially and temporally) and therefore not a serious burden on either natural land resources or on Native populations. Though perhaps the most enduring, the Petit Nord was only one of several such landscapes, which for several centuries facilitated seasonal European exploitation of the cod

¹⁰⁹ Cf. Jackson *et al.* (2001).

¹¹⁰ Pope (1997; in press a).

resource, along the coasts of Newfoundland, Cape Breton, and the Gulf of St Lawrence.

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SECTION TWO

TRADE, PROFITABILITY AND TAXATION

CHAPTER FIVE

THE MEDIEVAL HERRING FISHERY IN THE WESTERN BALTIC¹

Carsten Jahnke

Introduction: Herring—fish for an artificial market

‘Oh, praise the Lord, that he has created a fish without bones that we can obtain the whole year round.’ This is the basic tenor of the remarks made by the medieval schoolman Thomas de Cantempré (1201–1263), in which he describes the fish most commonly eaten in the Middle Ages: the herring.² Thomas de Cantempré, like many of his contemporaries, knew this fish only in its gutted or processed form. He had apparently never been to the sea and could not imagine that the fish swimming in the brine did not correspond to its natural form. His remarks are nonetheless typical of a consumer who consumed a product far removed from its point of origin, and are an important indication that the consumption of salt water fish, which extended far into western Europe’s interior, represents the result of the development of a market in which, due to external factors, new and hitherto unknown products were introduced that did not correspond to the natural food sources of the inland population.

With that background in mind, this essay will address the links between the medieval herring fishery in the western Baltic and the inland areas of Europe. It will briefly describe when and for what reasons herring, an ocean fish, became an everyday food all over Europe. It will further examine, using the Scanian fisheries as an example, the effects of this market development on a regional fishery and its subsequent development from an indigenous fishery to an international sensation.

Practical considerations will take centre stage here: that is to say, the focus will be on the people who did the fishing, where, how and under

¹ Translated by Charlotte Masemann.

² Hühnemörder (1981).

which conditions. Following this will appear a brief account of the economic and political structures of the Baltic which form the background for the particular market system of the herring markets in that region, exemplified by the fisheries off the island of Rügen and off Scania. In conclusion, the essay will describe both the possibilities of quantifying catch amounts in the Middle Ages, using the Scanian fishery as an example, as well as the trade routes and relationships between these herring fisheries in the western Baltic and their buyers in Europe.

It is the goal of this essay to portray the historical development of the herring fishery in the western Baltic and to indicate its relationship to other large European fisheries. The recent research of the last fifteen years is very useful here in that it is able to debunk a certain number of historical myths concerning the fishery by providing numerous studies of documentary sources as well as the evaluation of archaeological evidence. An example of one such debunked myth is that of a fragmented European economy in the Middle Ages. This research also indicates, however, the limitations of historical research in attempting to quantify the medieval biomass through analysis of medieval serial sources.

The spread of herring into the European inland market

The catch and consumption of herring formed part of the regular habits of Baltic coastal dwellers since time immemorial, as the Arab geographer Al-Idrisi³ notes in his description of this area, an observation confirmed in numerous archaeological finds.⁴ Fish was a natural component of the nutrition of coastal dwellers of the Baltic, both in the Scandinavian North and the Slavic South.⁵ There are also indications that by the eighth and ninth centuries—the Scandinavian Viking age—herring was caught, gutted, salted and traded on a large scale.⁶ Nonetheless the natural area of consumption of this fish was confined on the one hand to a strip along the coastline of fifty to one hundred kilometres wide; this was certainly true in the Danish province of Scania.⁷ On the other hand, preserved ocean fish, above all cod and herring, had an astonishing

³ Al-Idrisi 7th climate, 3rd–4th section, in Birkeland (1954) 73–75.

⁴ Heinrich (1987); Bødker Enghoff (1999); Bødker Enghoff (2000).

⁵ Meyer (2002).

⁶ Bødker Enghoff (1996); Bødker Enghoff (1999) 49–50.

⁷ Jahnke (2000) 63–64.

importance in the entire European market from the ninth century on, and not only along the coasts. This can only be explained by the fact that the increasing Christianization of Europe led to a change in eating habits. Since the fourth century, the Catholic Church had promoted a system in which believers were to refrain from the consumption of all meat at certain times of year; by 1300 this had become regulation. From this point, until the Reformation, Christians were meant to fast at Easter and Advent, and also on Wednesdays, Fridays, Saturdays and other major holy days.⁸ These rules affected not only the higher and lower clergy, but stipulated that laypeople should also fast for 120 to 182 days in the year.⁹ Even though these fasting regulations were certainly not applied everywhere with equal thoroughness,¹⁰ substitute food products had to be found that would be available at low cost to a large part of the population, especially in the winter months, when local waterways were frozen and local freshwater fish, which at any rate were more expensive, were not available.

Under these conditions herring was an ideal substitute. When gutted and salted, it remained good for up to two years;¹¹ it could be transported for long distances; it could be sold cheaply and in small quantities; and it could be eaten without a great deal of effort. Thus it was no wonder that herring began its triumphal march as a food for fasting periods almost simultaneously with Christianization. For example, gutted herring appears in archaeological finds from the tenth century on the cathedral island at Wrocław, coinciding with the foundation phase of the bishopric of Breslau.¹² At the same time the word *hâring* appears for the first time in Old High German sources.¹³ For example, in 1035, *salsus piscis bonus (h)almarius* was regularly served in the refectory of the monastery of St. Gall (in present-day Switzerland), a term that was glossed as 'herring' by a contemporary.¹⁴ These examples bolster the assertion that by the eleventh century at the latest, the Christianized

⁸ Woolgar (2000) 36–37.

⁹ Hoffmann (1997) 18; Woolgar (2000) 37.

¹⁰ Disagreements during the Reformation show how deeply fasting regulations had been internalised; violation of fasting regulations was often taken as a sign of rejection of the Catholic faith. Even as late as 1582 the loan account of the castle Nyköping in Sweden lists 156 meat days and 208 fish days. Lagerquist (2004) 22.

¹¹ Tallinna Linna Arhiiv, B.h. 5–1, fol. 256r.; Jahnke (2000) 222–223.

¹² Bødker Enghoff (1999) 69.

¹³ Kübler (1993), *sub verbo hâring* und *hering*; *Althochdeutsche Glossen III* (1879) 455, 23, 456, 41, 683, 56; Jahnke (2004) 132.

¹⁴ *Liber Benedictionum*, 287, 52; Jahnke (2004) 132.

areas of Europe formed a unified market for preserved ocean fish, a market in which herring were demanded above all. This demand for ocean fish was artificially established through religious fasting regulations and was not based, particularly in inland Europe, on the traditional eating habits of the local, indigenous population.

Through the passage of time, however, these replacement products, sourced from remote ocean regions, established themselves in the diet of a broad section of the population. Herring became increasingly a food for the poor, as well as an everyday food, because it could be caught in great quantity and brought inland. It thus differentiated itself in price considerably from other substitutes, such as the local freshwater fish. Thus harvesters in Sedgeford in England knew herring as an everyday food in the thirteenth century; so did soldiers in Dirleton in Scotland in around 1300,¹⁵ workers in the grape harvest in Heilbronn, and the inhabitants of hospitals from Lemberg/Lvov in the east to the British Isles in the west.¹⁶ Herring was so common as an everyday and fasting food that Ash Wednesday was known in England as 'king herring' and as 'Heringstag' in Württemberg; it symbolised the transition from the feast days of Carnival to the fast days of Lent and the return to the everyday norm.¹⁷

What is the source, then, of this herring? A look at the medieval herring fishery reveals that five large areas had more than regional importance. In the British Isles the herring fisheries of Scarborough and Great Yarmouth in England, as well as those of Llan-faes in Wales,¹⁸ were particularly significant; in Scandinavia, the fisheries on the Danish-Norwegian Bohuslen coast and the fishery off the coasts of the Danish islands and in the Sound had a similar significance, as did the Slavic fisheries, especially on the coasts of the island of Rügen in Pomerania.¹⁹ The following remarks will show that the continuous historical and economic relationship between the large fisheries of Rügen and the Sound is particularly evident. During the later Middle Ages, the English and Welsh fishing areas mainly served the demands of the markets of the British Isles rather than those of the European continent, only achieving a wide-ranging, trans-regional significance beginning with the

¹⁵ Woolgar (2000) 39, 44.

¹⁶ Woolgar (2000) 40–41; Jahnke (2000) 227–272.

¹⁷ Dirlmeier and Schmidt (1996) 272.

¹⁸ Kowaleski (2000).

¹⁹ Jahnke (2000).

decline of the Scandinavian fishing areas into regional insignificance,²⁰ while the fishing areas of the Bohuslen were more characterized by a fluctuating seasonality.²¹

The herring fishery and the processing of the catch in the Sound

In contrast to the case in other European fishing grounds, and in particular contrast to the fisheries organized by guilds in European cities, the Scandinavian fishery was not undertaken by trained and professional fishermen.²² Indeed quite the contrary was the case, since the large herring schools of autumn offered farmers and other members of the underclass, particularly in the Sound, a good opportunity to obtain additional supplies and income before the long Scandinavian winter. That such a fishery could develop in this region, outside of the constraints of guilds, was due to a Scandinavian peculiarity in the exercise of lordship. As far as one can discern from the limited textual evidence, in the age of the sagas the king had indeed exercised direct lordship over the open seas in the area of the Danish coasts.²³ He lost this right, however, at the beginning of the eleventh century. He was able instead only to exercise direct lordship over all the beaches in his kingdom, so that these would not fall into the possession of, and thus under the lordship of, the local nobles. It is evident in sources from the eleventh century, and probably also earlier, that farmers of the Sound came to the beaches in the autumn to catch herring. They did this on royal territory and fished in freely accessible, unregulated waters, without anyone being able to hinder them seriously in so doing. The autumn fishery developed increasingly into a tradition in the Sound that was widespread in the Danish islands and on the peninsula of Scania, as passages from the *Knytlinga Saga*²⁴ and Saxo Grammaticus' *Gesta Danorum*²⁵ concerning the eleventh and twelfth centuries make very clear. The Danish kings were unable to exercise much control over this traditional right of farmers to the herring fishery. The cities that developed in this area during the course of the thirteenth and

²⁰ See discussion below.

²¹ Dalén (1941) 41–42.

²² Stoklund (2000).

²³ Niitemaa (1955) 29 ff.

²⁴ *Knytlinga Saga*, cap. 28, 55–56.

²⁵ Saxo Grammaticus, lib. 15, IV, cap. 14, 527.

fourteenth centuries, such as Skanör, Falsterbo, Malmö, Landskrona and Copenhagen, were also unable to monopolize the autumn fishery for their own populations. On the contrary, the herring fishery in the Sound was and remained a fishery that supplied secondary income, particularly for the rural underclass; the king merely had the power to assert his rights through the levy of taxes. This traditional secondary income fishery flourished throughout the entire Middle Ages, as Bjarne Stoklund has shown in his research.²⁶ These farmer fishermen, or *bond-efiskere*, originated not only from the coastal regions on the Sound, but also from inland on the islands of Zealand, Falster und Møn, and of the peninsula of Scania.²⁷ The herring fishery as a source of secondary income became so established that these farmers were levied special taxes, known variously as *Heringszehnten*, *Heringspfennig* or *Bootshering*, among others.²⁸ It was not only farmers who engaged in this secondary activity in large numbers; other people from all areas of the population, such as students, sextons and journeymen all participated. They were assigned to particular classes of taxes defined by the herring fishery as well. The autumn herring fishery was so widespread for the inhabitants of the Danish islands and Scania that at this time neither church visitations nor, later, billeting, could take place, because most of the population were on the beaches of the Sound. Their houses were closed up and no one attended the local churches.²⁹

When this indigenous fishery for secondary income developed into an international market fishery from the beginning of the thirteenth century, as will be described below, the catch capacity of the local fishing population no longer sufficed. From the Danish side, inhabitants of other parts of the kingdom moved in on the herring fisheries in the Sound, now known as the Scanian fairs. These fishermen, particularly those from the city of Flensburg in Jutland,³⁰ specialised in seasonal herring fisheries and moved from herring fishery to herring fishery in the Baltic and the North Sea, offering their services for payment.

It was not only Danish fishermen, however, who took part in the herring fishery in the Sound from the thirteenth century on. The participation of fishermen from other lands bordering on the Baltic

²⁶ Stoklund (2000).

²⁷ Stoklund (2000) 93–107; Jahnke (2000) 181–185.

²⁸ Steenstrup (1905–1906) 163.

²⁹ Krøyer (1887) 29; Steenstrup (1905–1906) 155.

³⁰ Hanserezesse (HR) I.1, 276, 205–206; Stoklund (1959) 106–107; Jahnke (2000) 304.

and the North Sea in this fishery can also be demonstrated. From the fourteenth century on, more and more merchants attempted to influence the fishery in the Sound in their own way, and to release themselves from their dependence on the local population. For this reason these merchants outfitted their own fishermen with boats and equipment, and took them along from their home cities to the Sound. Some of these fishermen were bound by means of bond agreements directly to certain merchants;³¹ others acted more freely, economically speaking, at the fairs. In this way not only 'foreign' fishermen from the Baltic came to the Scanian fairs, but merchants and fishermen from the North Sea also used this opportunity to profit from the herring riches of the Sound. These fishermen from the North Sea came in the autumn together in a large convoy to the Baltic,³² since the Wendish cities had forbidden the rental of fishing boats and the purchase of fishing equipment by merchants from the North Sea in Baltic ports in 1384. The social background of these fishermen is as unknown as that of the German fishermen from the Baltic region.³³ It is extremely unlikely that in these fishermen we can see educated, urban fishermen organized into guilds, because their absence destroyed the urban supply of marine fish over the long term. In any case the sources offer no further clues as to the possible origin of these fishermen.

Because of its enduring agricultural tradition, the Scanian fishery remained free the longest; no guilds arose to govern access to the fishery. Indeed, on the contrary, each season it was usual for groups of five to eight men to form a temporary ad hoc fishery society, known as the *notlag*, that went out on one boat to fish.³⁴ The interior organization of a *notlag* could be quite variable. It could involve the economic union of equal partners; it could involve men who put their labour at the disposal of one boat owner; it could involve fishermen entirely signed on by one merchant. The only thing that was decisive in the formation of the union was the possibility of bringing together the necessary equipment, i.e., a boat and a net. A *notlag* lasted for one season and was freshly constituted each season. Participation in a *notlag* in the Scanian fishery was subject

³¹ Cf. Archiv der Hansestadt Stralsund, Städtische Urkunden, 689, 1415 Juli 29.

³² Archiv der Hansestadt Lübeck, Pfundzolliste 1384/1385, here fol. [48r.]; Jahnke (2000) 188 f.

³³ HR I.2, 276, 333–336, § 12, 335–336. Previously the *Schuten* of the North Sea fishermen had overwintered in Baltic ports. Archiv der Hansestadt Lübeck, ASA, Externa, Batavica, 149.

³⁴ Cf. Stralsunder Liber Memorialis, vol. III, no. 654, p. 185.

to no exclusions according to qualifications; the only prerequisite for admission to the fishery consisted of having paid the stipulated catch tax to the lord twice in the season. The taxes were usually submitted in the form of herring; for this reason both the tax and the lead tax token which had to be presented as proof of payment were known as *åressild*, or the year's herring.³⁵ Furthermore the king levied a toll on the use of the temporary huts that were erected as shelters on 'his' beach; this was known as the hut tax, or *bodepennig*.³⁶

Small, open boats, the so-called *schuten*, were used as fishing boats. These *schuten* could spend the rest of the year in use in coastal traffic or for other freight in the Baltic until they were fitted out for the herring fishery in the fall.³⁷ They had a carrying capacity of one to two *last* (twelve to 24 Rostock herring barrels) and cost on average from one to eighteen Lübeck marks, while a normal 'ship' would be estimated at from twenty to more than 100 marks.³⁸

Fishing was carried out in one of two ways in the Scanian fishery.³⁹ One group of fishermen fished by day with set nets, while another fished by night with seine nets. Here the choice of fishing technique was left entirely up to the fishermen. It was strictly forbidden, however, to fish with ground nets, or *wantegarn*;⁴⁰ the reason for this prohibition remains unclear. One can only say in general terms that it must have had to do with a possible endangerment of the fish stocks, although this is not specifically stated.

Because the King of Denmark had no ability to control the fishery in the Sound or to collect tolls from the fishing boats, the fishermen were compelled to bring their catch daily to the (royal) beaches. This opened up the possibility for the rulers of Denmark to centralize the collection of taxes in a few locations and also to control the fishermen and the fishery within certain boundaries. This system was, however, also advantageous to merchants, because they could sell their fish on an open market and could control the processing of the fish directly. This enabled them to avoid adulteration and flaws in processing more effectively.

³⁵ Christensen (1903) 390 ff.

³⁶ Christensen (1903) 391 ff.

³⁷ Cf. Archiv der Hansestadt Stralsund, Städtische Urkunden, 689.

³⁸ Jahnke (2000) 189–190.

³⁹ Dansk Rigslovgivning, vol. I, 54, §§ 3, 5, 6, 7, 9, 12, 24, 46, 47.

⁴⁰ Dansk Rigslovgivning, vol. I, 54, § 4, p. 186.

Organization on land was strictly organized on the basis of division of labour and was at the same time completely free. The fishermen had to sell their catch on land freely.⁴¹ No merchant was allowed to row out to them or to engage in discussion of prices ahead of time.⁴² The arrival of the first fishermen on land was made known to the international merchants at the fairs by the hoisting of a signal.⁴³ They then rushed to the beach in order to get the best fish for themselves in free auction. Subsequently the fish were brought for the merchants by special fish transporters⁴⁴ from the beach to the merchants' settlement, the *Vitte*, behind the seawall. There the fish were processed in special huts known as *styrterom*. Processing on the beach or on the boats was expressly forbidden.⁴⁵ The fish were gutted by women especially appointed for the purpose, known as *gællekonerne*; then they were packed by the *læggekonerne*, or packing women, who packed them, according to an established principle, 830 to 840 herrings to the barrel (the fish were of course laid in them, not thrown).⁴⁶ The fish were then covered in a brine of Lüneburg salt⁴⁷ and water. These women were responsible for consistent quality of the end product and had to make sure that only the best fish and the best salt were used. After the barrel was filled it was finally inspected by a controller under oath, known as a *Wracker*,⁴⁸ who branded the barrel with a quality control sign, the *Zirkel*. This guaranteed the place of origin, the time of packing and the quality of the product. Together with the mark of the merchant, which was also branded on the barrel, this mark enabled demands for compensation to be made against the producing merchant all over Europe.⁴⁹

This system of production guaranteed such a high and consistent quality that Scanian herring largely dominated the European market until the middle of the fifteenth century. It was only at that point that the standard of quality of other fisheries sufficiently approached that of Scania to pose a serious danger to it. For this reason, not only the

⁴¹ Nicolaisen (1907) 134, § 10.

⁴² Dansk Rigslovgivning, vol. I, no. 55, § 36.

⁴³ Samling af Sveriges Gamla Lagar, IX, V.6, 492, § 36; Nicolaisen (1907) 134, § 10.

⁴⁴ Dansk Rigslovgivning, vol. I, no. 54, §§ 13, 18.

⁴⁵ Dansk Rigslovgivning, vol. I, no. 54, §§ 26, 35.

⁴⁶ Dansk Rigslovgivning, vol. I, no. 54, § 18. HR II.1, no. 507, 449–450; Cieslak (1952) 141–142.

⁴⁷ HR III.5, 365, 471.

⁴⁸ Dansk Rigslovgivning, vol. I, 54, § 51.

⁴⁹ Cf. discussion below in Section VI.

Hanseatic cities preferred Scanian herring into the fifteenth century, but also South Germans, Poles, Hungarians and White Russians. Indeed, in Maastricht in 1395, a fishmonger had to post a *palmtak*, or palm frond, on his door, in order to warn his clientele,⁵⁰ if he wanted to sell herring other than that from Scania. In 1384 the Scanian method of processing was officially introduced into the English herring fishery in Scarborough in order finally to make this fishery competitive.⁵¹

The Scanian fairs provided a strict division of labour, a free auction and unregulated access to the fishery; these were exceptional in the context of the development of the north European economy and no parallel existed in this region. The free Scanian market fishery could only have developed under the particular legal and economic traditions of the Sound.

*Economic and political structures in northern Europe
during the Middle Ages*

In order to understand better the meaning of the trade in Baltic herring during the Middle Ages, it is necessary in anticipation to undertake a very brief *tour de raison* of the structural and historical changes to the trade history of northern Europe. Briefly put, the economic history of the Baltic during the Middle Ages can be divided into three phases. Until the middle of the twelfth century, trade in the region was undertaken by the combined forces of different 'nations'. Scandinavians, Slavs, Russians, Friesians and Gotlanders together organized an extensive trade between Russia and Jutland, in which 'German' merchants in Haithabu/Schleswig, Ribe or Slavic Lübeck received wares from Baltic merchants and brought them into the territory of the Holy Roman Empire.⁵² *Salt eða síld* already at this time constituted one of the most traded products of the region, as Snorri Sturlason indicated in the Heimkringlasaga.⁵³

By the middle of the twelfth century, increasingly more 'German' merchants were coming to the markets of the Baltic. At the same time both Denmark and the Holy Roman Empire had expanded into the

⁵⁰ Eversen (1878) 305, note 1.

⁵¹ Childs (2000) 20, 22.

⁵² Jahnke and Englert (forthcoming).

⁵³ Jahnke (2004) 132.

pagan Slavic and Prussian tribes. As a consequence of this expansion some of the previously Slavic trade settlements, such as Lübeck, Stettin/Szczecin or Danzig/Gdansk achieved a new and attractive legal status, the *Stadtrecht*, or municipal charter, in which more and more 'German' merchants set up in business. These merchants penetrated the old trade system of the Baltic and overtook the old carriers of trade by the middle of the thirteenth century.⁵⁴ At the same time these merchants created, along with the Hanseatic League, an influential economic network, even though in most trade areas it did not hold a monopoly or present a unified political institution.⁵⁵ Within the Hanseatic League, Lübeck took the leading role in the thirteenth century as a result of its economic significance; this role was based on trade in salt and herring.⁵⁶ The political power and internal unity of the Hanseatic League reached their zenith with the Peace of Stralsund in 1370.

After this high point of political might in 1370, began a phase of internal strife between the individual regional groups within the Hanseatic League, which continued for the next hundred years. At the same time the Wendish states within this network sought economic and political confrontation with their English, Scottish, Flemish and 'Dutch' rivals. This eventually led to a shift in trade routes in the Baltic, in which Lübeck and the Wendish cities lost their economic leadership, and new merchant groups, such as the English and the Dutch, began participating directly in Baltic trade.⁵⁷

*The historical development of international herring markets
in the western Baltic*

The early Bohuslen fishery and the herring markets on Rügen

Before the middle of the thirteenth century there were only two internationally significant herring fisheries. Written sources, above all the Saga of Snorri Sturlason, suggest on the one hand that the herring fisheries on the coasts of the Bohuslen were visited by international merchants

⁵⁴ Jahnke (2004) 133.

⁵⁵ Hammel-Kiesow (2000).

⁵⁶ Hammel-Kiesow (2000).

⁵⁷ Jahnke (2000) 90–119.

in the period of the eleventh to twelfth centuries.⁵⁸ This development has parallels with the English and Danish fisheries, such as that at Yarmouth in the same period.⁵⁹ In any case, written evidence from this period is insufficient to allow for a complete judgement of the fishery in Bohuslen at present.

We are much better informed, on the other hand, about the second, important period of the herring fishery in Bohuslen, which lasted from about 1217 into the 1320s. The Norwegian King Håkon IV Håkonsson, who reigned from 1217 to 1263, and his successors pursued an active trade policy during this period, which left behind discernible traces. During the reign of Håkon IV Håkonsson the city of Marstrand, among others, was founded and it developed into the centre of the Bohuslen fishery.⁶⁰ From the beginning of the fourteenth century, the herring fishery took place from Michaelmas to Shrove Tuesday and drew not only English merchants, but also those from Bremen and other North Sea and Baltic ports to Marstrand, in order to purchase and process herring there.⁶¹ This herring was brought from there to the herring markets on the south coast of the Baltic, where it constituted the most traded item in traffic between Norway and England.⁶² The sources, however, only contain reference to the trade itself and remain unclear on the organization of the catch and its processing.

The fishery off the island of Rügen, the other internationally significant herring fishery of the twelfth century, is much better documented. Herbord, a monk from Bamberg, impressively described the richness of the herring stock of this island right at the beginning of the twelfth century.⁶³ At the same time, the abbot of the Abbey of Corvey in Lower Saxony counterfeited a privilege in order to ensure the influence of his monastery on this pagan and Slavic island, so important for the supply of food for fast periods.⁶⁴ According to documentary sources, foreign Saxon merchants were already seeking out the herring fisheries of Rügen at the beginning of the twelfth century, in order to purchase the raw

⁵⁸ Molander (1925); Boeck (1874).

⁵⁹ Jahnke (2000) 283–284.

⁶⁰ Lönnroth (1963) 109–112.

⁶¹ Lönnroth (1963) *op. cit.*; Helle (1968) 101–114; Jahnke (2000) 284–289.

⁶² Nedkvitne (1977) 40, 48–58, 182–185.

⁶³ Herborði, *Vita Ottonis*, Lib. II, cap. 41, 102.

⁶⁴ Jahnke (2004) 131; Jahnke (2000), 20–21.

product directly from the source, and giving tribute to the pagan high priests of the nearby temple of Svantevitte in Arkona.⁶⁵

Because of the geographical location of their city, the merchants of the city of Bardowick had the best trade relationships with the Lüneburg salines. From the middle of the twelfth century, the merchants of the city of Lübeck in the Duchy of Saxony also had an excellent relationship with Lüneburg. Lüneburg salt was irreplaceable for the production of high quality herring. At the same time these merchants possessed excellent contacts in the Rhineland and towards Westphalia, at that time the largest and most important markets for foods for fast days.⁶⁶ Through this combination—the best access to one of the important base ingredients and fantastic market possibilities—Saxon merchants were able to corner a commanding position within the herring markets of Rügen, even despite the big religious differences between the pagan inhabitants of Rügen and the Catholic Saxons.⁶⁷

After the conquest of Rügen by Danish troops in 1169, the development of the Slavic settlement of Lübeck into a German city by the middle of the same century, and the destruction of the city of Bardowick in 1189 by Saxon troops, the merchants of Lübeck were able to develop their leading position further in the fisheries of Rügen and to alter the markets according to their liking into a particular type of fair. According to a privilege given by the princes of Rügen to Lübeck merchants in the year 1224,⁶⁸ these fairs, and the processing of herring, took place in particular locations outside of the normal trade centres. In these locations, the so-called *Vitten*, merchants occupied their own huts, or *Buden*, in which they did not fall under the jurisdiction of the princes of Rügen, but rather that of their home city, each of which was represented by its own steward. The fishermen lived separately from the merchants and their *Vitten* in their own small settlements, which were later called *fiskelejer* in the Danish context, after the Danish word for fishing camp. Fish caught by Slavic fishermen were gutted, placed in barrels and salted with Lüneburg salt at these *Vitten*. The merchants brought their own empty barrels and their own salt to the island and exported the salted fish all over Europe. After some initial strife between

⁶⁵ Herbordi, *Vita Ottonis*, Lib. III, cap. 30, 142; Helmold, *Chronica*, tom. VI, 17, and tom. CVIII, 213.

⁶⁶ Hammel-Kiesow (2000).

⁶⁷ Helmold, *Chronica*, tom. VI, 17 and tom. CVIII, 213.

⁶⁸ *Urkundenbuch der Stadt Lübeck* I, 27, 32 f.

Lübeck and Stralsund, both cities dominated this trade in fish until the end of the thirteenth century and distributed the product in an area that reached from Silesia in the east to central and southern Germany in the west.⁶⁹

The Scanian Fairs

Rügen's herring fishery was able to maintain its international importance, at least in part, until 1290, when the city of Stralsund obtained its last significant privilege for this market.⁷⁰ The Scanian fairs proved to be a new and, in the end, overpowering rival for the Rügen herring fishery. They drew international merchants so much under their influence that the merchants came to seek out the Rügen herring fishery only sporadically or in crisis situations, such as the implementation of a boycott on the Scanian fairs; the end of the Rügen fishery was thus based once and for all on the economic superiority of its Scanian rivals, and not on the disappearance of the herring stocks around the island.

What were the advantages of the Scanian fishery over its counterpart at Rügen? At the same time as they began to dominate the herring markets at Rügen, the Lübeck merchants discovered the indigenous fishery areas of Scania and Zealand as very promising markets. Not only did the herring caught in the Sound region meet the German merchants' expectations of high quality, but the farmers from the Sound region who collected on the beaches after the autumn's catch opened up hitherto undreamed-of markets for imported goods; thus a general market developed there alongside the herring fishery,⁷¹ *þá er þar var markaðr á Skáneyri*.⁷² The farmers did not assemble in a scattered manner all along the beaches, but instead at specific and traditional locations, such as the peninsula of Halør, where later Skanör und Falsterbo were built, or in Dragør on the island of Amager. These places remained as temporary marketplaces throughout the entire Middle Ages, and this constituted a defining characteristic of the Scania fairs. Other meeting places, such as Malmö, Trelleborg, Simrishamn and Copenhagen did develop, over the course of the Middle Ages, from temporary settlements of

⁶⁹ Jahnke (2000) 32–36.

⁷⁰ PUB III,1, 1541, 101 f.

⁷¹ *Snorris Königsbuch, Heimskringla*, vol. II, Cap. 158, 292 f.; *Egils Saga*, Cap. 19, 53 f.

⁷² *Saga om Birkebeinar & Baglar*, Cap. X, 13 ff. Cf. also *Hallfredar Saga*, Cap. 9, 64 f. E.

fishermen into cities, but they could not retain their grasp on the traditional herring catch and herring trade.

Thus, the autumn trading that the Lübeck merchants undertook in the last half of the twelfth century on the beaches of Scania offered advantages on all sides, as the chronicler Arnold of Lübeck vividly describes:

On the honour of the Danes. The Danes who imitate the habits of the Germans, which they know well thanks to living so long in their neighbourhood, are now adapting the dress and weapons of other nations. Formerly, they used to dress like seamen because they lived close to the coast and have always been occupied with ships but now they clothe themselves not only in scarlet and parti-coloured and grey furs but also in purple and fine linen. The reason is that they all became very rich because of the fishing that takes place every year around Scania. While the fishing is taking place, merchants come there from all the surrounding nations with gold, silver and other treasures to buy herring from the Danes, herring that they catch at no cost by the abundant grace of God, while the merchants, in order to make a good bargain, offer the best they have, and sometimes even their lives in shipwreck.⁷³

The autumn trading on Scania became so significant for the city of Lübeck, that, in 1202 for example, all of Lübeck's elite, along with the entire Lübeck fleet, was there, with the result that the Danish king was able to incorporate the city into his kingdom through the capture of its most important citizens and the detention of the fleet, which rode at anchor in the waters off Skanör into November. The importance of these fairs for Lübeck, which found its expression in the fact that its entire merchant elite as well as its entire merchant fleet was present there, was based on the two most important trade goods of the city: herring and Lüneburg salt, which complemented each other perfectly; the fairs, moreover, enabled all other types of wares to be sold at the same time.

In addition, east-west trade in Europe increased a great deal from the middle of the twelfth century to the middle of the thirteenth century. This increase was further intensified by the founding of new cities on the

⁷³ Arnold of Lübeck, *Lib. III*, Cap. 5, p. 77. 'Omnibus enim divitiis abundant propter piscationem, que quotannis in Scania exercetur, ad quam omnium circumquaque nationum negotiatores properantes aurum et argentum et cetera queque preciosa illuc deferunt, et comparatis halecibus eorum, que illi gratis ex divina habent largitate, quasi pro vili quodam commercio sua optima, nonnunquam etiam se ipsos naufragando relinquunt.'

east coast of the Baltic, such as Danzig, Riga and Reval. This upswing was partially based on the increased advance of German merchants into Baltic trade; it was also partially based on an economic boom in Westphalia, the Rhineland and Flanders, all markets for products from the east.⁷⁴ After 1227 the route from Hamburg to Lübeck developed as the major trade route from the North Sea to the Baltic, because the direct route between the North Sea and the Baltic around Skagen was tremendously dangerous on account of the current and the wind conditions there.⁷⁵ At the same time, however, English and Scottish merchants and those from the Zuiderzee continued to sail to the coast of Norway in order to trade. When merchants, first from Lübeck and then shortly afterwards from other parts of the Baltic, came to Scania, it was only a short hop towards the south for the North Sea merchants to meet with their Baltic counterparts.

Between around 1200 and 1251 the traditional meeting places for fishermen on the Sound developed; first was Skanör, then Falsterbo, Malmö, Dragør and other places as well. Collectively these became the international herring markets and fairs known as the fairs of Scania. Herring was the driving force and the starting point of all of the trade that took place at these fairs, and was a product that interested everyone. The later dominance of this product on the European market can be explained not only because of its high quality, but also because merchants engaged in other lucrative regional and international trade relationships alongside the trade in herring; the most disparate strands of their trade were thus woven together. English, Flemish, 'Dutch', Rhenish and Westphalian merchants came with wine, cloth and luxury goods; the Scandinavians with agricultural products and furs; and merchants from the eastern Baltic with wax and furs. The autumn fairs of Scania, which ran from the Assumption of the Virgin on the fifteenth of August to either St. Denis' Day on the ninth of October or Martinmas on the eleventh of November, were among the most important regional fairs of the thirteenth and fourteenth centuries—so important, in fact, that merchants from other herring areas, such as Rügen, were almost entirely disregarded.⁷⁶

⁷⁴ Hammel-Kiesow (2000).

⁷⁵ Jahnke (2006).

⁷⁶ Jahnke (2000) 64–176.

The Danish kings, as lords of Zealand and Scania, profited from this international trade through increasing toll incomes from herring and other commerce. Nevertheless they were not quite strong enough to have the entire market under their control. Thus Lübeck merchants were able to transfer and extend to Scania both the market system that they had developed on Rügen around the year 1224 and also the conditions of their privileges on Rügen.⁷⁷ These early privileges, gained for trade in Scania, reflected four central concerns above all: firstly, security of merchants, of their goods and of the trade in Denmark and on routes to and from Denmark, for example in case of shipwreck or jettison; secondly, stable and assessable taxes; thirdly, independent jurisdiction of merchants according to the laws of their city of origin; and finally, being exempted from religious holidays, so that they could process fish and carry on trade every day of the fairs. Lübeck may have been the forerunner in terms of privileges, but by the end of the thirteenth century most of the cities of the Baltic enjoyed similar freedoms at the fairs.⁷⁸

In parallel to the cities of the Baltic, merchants and cities from the North Sea, particularly the port cities on what later became the Dutch coast, also won privileges at the fairs of Scania. The Danish kings tried to play the cities of the North Sea off against those of the Baltic, but in the end they had to grant both parties the same rights without having gained very much at all. Some of the most important privileges for the cities of the North Sea were the so-called *ummeland* traveller privileges of 24 and 25 September 1251. These privileges were granted to those merchants who travelled to the fairs of Scania around Skagen or *umme-land*.⁷⁹ In these privileges, King Abel established a unified herring toll on each ship over twelve tons *Last* or 144 Rostock herring barrels, and exempted merchants from observing Sunday.⁸⁰

In the first half of the fourteenth century the kingdom of Denmark disintegrated because of problems of internal politics and finance, and a period of instability set in. The cities that visited the fairs of Scania used this instability in order to extend significantly their rights and privileges at the fairs. During this period the fairs of Scania developed their own features and market system. The cities had their own *Vitten* set apart

⁷⁷ Jahnke (2000) 193 ff.

⁷⁸ Jahnke (2000) 193–206, in detail.

⁷⁹ *Diplomatarium Danicum* II.1, no. 50, 50 f. and *Hansisches Urkundenbuch* I, 411, 133 f., 423, 134 f.

⁸⁰ Jahnke (1997) 7.

from one another, particularly in Skanör, Falsterbo and Dragør, which resembled cities in miniature.⁸¹ Here merchants could purchase their own alienable and heritable properties and build huts on them, and there were streets, shops, bakers, butchers, drapers, churches, monasteries, inns, brothels and everything else that would also appear in the home city of the merchants.⁸²

The *Vitten* were administered by city stewards,⁸³ who gained ever more rights throughout the fourteenth century, with the result that by the middle of the century the *Vitten* were able to operate fully outside the writ of the Danish kings during the period of the fairs and essentially formed extraterritorial proto-city colonies of foreign trading powers on Danish territory.⁸⁴ The trading cities that possessed a *Vitte* in Scania included not only those of the Hanseatic League in the Baltic, but also cities on the Zuiderzee in the Low Countries. In this manner, representatives of northern Europe's leading trading cities assembled. These included Danzig, Rostock, Lübeck, Hamburg, Bremen, Den Briel, Dordrecht, Elburg, Harderwijk, Kampen, Leiden, Maastricht, Zierikzee, Zutphen and Zwolle. They met yearly in the autumn at the herring fair, in order to buy fish there and to trade their wares.⁸⁵ English and Flemish merchants also had a presence there, as did of course Danish cities. Merchants had the right at these *Vitten* to trade all wares according to the law of their home city, both wholesale and retail. Jurisdiction in the *Vitte* was the responsibility of the steward and the stewards' court, which was made up of all the stewards at the fair.⁸⁶ The few rights that remained to the king, and the responsibilities of the fishermen and merchants, particularly in regard to market peace and the tolls which were to be paid, were recorded in a special collection, the *motbok*, which was

⁸¹ Cf. the catalogue of the cities represented at the fairs and their privileges, Jahnke (2000) 400–405.

⁸² HR I.1, 111; HR I.4, 520, 478 ff.; HR I.5, 99, 66 f.; HR III.6, 513, 467–472; Archiv der Hansestadt Stralsund, Testamente 255, 1359 August 29.; Archiv der Hansestadt Stralsund, HS I.3, Liber de hereditatum, fol. 43r.; Archiv der Hansestadt Lübeck, Niederstadtbuch 1372, p. 198, Niederstadtbuch 1381, p. 465, Niederstadtbuch 1487 Jacobi apostoli, foll. 502r.–v.; Archiv der Hansestadt Lübeck, Testamente 1366 November 30., Hinric Smylowe; Schäfer (1927), CXX f.; Blümcke (1887), 441; Nicolaisen (1907) XII, XVIII.

⁸³ Cf. the catalogue of the city stewards at the Scania fairs. Jahnke (2000) 406–414.

⁸⁴ Jahnke (2000) 193–206 with detailed evidence.

⁸⁵ Jahnke (2000) 400–405.

⁸⁶ Schäfer (1927) CXXXVI–CXLVII.

read aloud every year at the beginning of the fair by the royal steward in the presence of all the stewards.⁸⁷

Some of the old, traditional fishing and landing places in Scania, such as Malmö, Trelleborg, Ystad and Simrishamn, developed into cities over the course of the Middle Ages. In these places efforts at autonomy by foreign merchants naturally collided with the interests of the indigenous Danish traders. In this urban context foreign merchants were thus able to win fewer privileges, and these with greater difficulty, than their counterparts in Skanör or Falsterbo. Since foreign fishermen and merchants lived and worked inside the cities, they had to follow the rules and regulations of these cities as well. This meant, for example, that they were not permitted to trade retail, because they did not possess their own churches and were also subject to a stronger, city-based control. On the other hand, the stone houses of the cities and other such amenities offered more comfort and also the possibility to remain in these places over the winter, to trade there, and thus to broaden their own business beyond the herring trade.⁸⁸

The success of merchants was, however, only one side of the coin. Danish lords also profited not insignificantly from the herring catch in Scania. Since they could tie the trade and processing of the fish to 'their' beaches, they were in a position to levy tolls and taxes on them. The resulting income constituted one of the largest entries in the royal accounts well into the fifteenth century.⁸⁹ Poul Holm estimates that the volume of late medieval Danish fish exports was double to triple the volume of the trade in oxen and half again as much the volume of all agricultural exports.⁹⁰ For these reasons the herring fishery at Scania was not only one of the most economically important phenomena of northern Europe, but also the most important economic factor in Danish politics. It was so important that in 1401, 'Queen' Margarethe I was in the position to mortgage toll income from Skanör and Falsterbo alone at 5,000 marks per year.⁹¹ The Danish kings attempted, even into the late Middle Ages, to make use of the economic power of the fairs of Scania through active trade policy to strengthen Danish trade, and also

⁸⁷ Samling af Sweriges gamla Lagar (1859) 485–493; Schäfer (1888) 172–180; Nicolaisen (1907) 133–139; Schäfer (1927) 80–99; *Dansk Rigslovgivning* (1989) 185–217. Cf. also Etting (2004) 42 ff.

⁸⁸ Jahnke (2000) 146–171.

⁸⁹ Holm (1998).

⁹⁰ Holm (1998) 20–21.

⁹¹ Etting (2004) 44.

their own personal finances.⁹² In the event, their direct influence on the fairs was too limited to make direct use of the economic currents of foreign merchants for their own economy.

The market system of the fairs of Scania consisted of different settlement formations with different rights. Behind the seawall lay the *Vitten* of the foreign and Danish cities and merchants, with their own system of rights and administration. On the beaches, in comparison, lay the settlements of the fishermen, the so-called *fiskelejer*, who had few of their own rights. Here the fishermen lived and slept in small huts made out of wood or rush mats—the *rainseaulx* of Philippe de Mézières,⁹³ and here they repaired and cared for their equipment and dried their nets. As was the case with the merchants, the fishermen came not only from Denmark, but also from the home regions of the merchants from the Baltic and the North Sea, such as Danzig, Stettin, Rostock, Wismar and Lübeck, or Amsterdam, Den Briel, Elburg, Harderwijk and Kampen.⁹⁴ The French traveler Philippe de Mézières estimated the number of fishing boats off Skanör and Falsterbo alone at 40,000 in 1380;⁹⁵ this was doubtless an exaggeration, but the serial medieval sources indicate that approximately 10,000 boats were used there.⁹⁶

With such a high number of boats and people in one place, it was one of the most important tasks of the Danish rulers to ensure peace between these most disparate groups and 'nationalities'. For this reason, the individual *fiskelejer* were located far from one another, individual groups were assigned their own areas, and violations of market regulations were severely punished.⁹⁷

Ensuring peace at the fairs of Scania was not only in the interests of the Danish rulers, but also of the foreign merchants. At the same time both sides also naturally attempted to extend their rights at the fairs at the expense of their competitors, with the result that the fairs of Scania became an enduring flashpoint in European politics of the late Middle Ages. The creation of the Confederation of Cologne in 1368, in which Rhenish, Wendish, and Prussian cities, as well as cities from the

⁹² Pasternak (1960) 333 ff.

⁹³ Jorga (1896) 248.

⁹⁴ Jahnke (2000) 178–189.

⁹⁵ Jorga (1896) 248; a translation appears in Etting (2004) 39.

⁹⁶ Cf. for example the information from the *Register over danske Slotte...* of 1523, here p. 313: 'Item sagde Hermandt Tilmand, lubeske fogitt paa Falstherboo, [...], at ther wor vdj fjordt paa Ffalstherboo 7 tuuszndh femhundritt och 15 bode.'

⁹⁷ Dansk Rigsløvgivning, vol. I, no. 54, §§ 12, 46, 47.

Zuiderzee, united in military struggle against the Danish king, can only be explained by the common interest of these cities—explicitly expressed in the Peace of Stralsund in 1370, which ended the struggle—in the herring catch and trade at these fairs. The Peace of Stralsund, with its particularly advantageous terms for foreign merchants and fishermen at the fairs, was thus the high point of mercantile power at Scania.⁹⁸ On the other hand, the Peace of Stralsund was an important turning point in the commercial history of northern Europe. The Wendish-Hanseatic cities—which had taken over the administration of the fairs for the following years as a result of the treaty—destroyed the balance of power, hitherto preserved by Danish rulers, between Baltic and North Sea cities at the fairs. These cities, acting out of self-serving economic interests, tried increasingly after 1370 to restrict the ability of their competitors from the North Sea to trade at the fairs. In the first few years this affected mainly the Welsh, English, Scottish, Flemish and those from Brabant,⁹⁹ but in the end this policy of Lübeck and Rostock affected all merchants from the North Sea, particularly those from the Zuiderzee. The Wendish cities attempted—ultimately in vain—to keep these merchants away from internal trade in the Baltic and to steer the large currents of goods through the Lübeck to Hamburg route.¹⁰⁰

This struggle of nearly two hundred years, waged by the Wendish cities against their competitors from the North Sea, remained not only unsuccessful, but also led to a revolution in fishery relationships in northern Europe. The Welsh, English, Scots, and Flemish, as well as those from Brabant and the 'Dutch' cities, could no longer, or only on a limited basis, gain access to the lucrative trade in fish and goods at the fairs of Scania. Quite soon they remembered their old fishing grounds in the North Sea, which had been hitherto underused. They also discovered new possibilities there with which to replace herring from Scania. They simultaneously began to develop their direct trade with Prussian cities more strenuously; as a result the fairs of Scania became obsolete as a trans-shipment centre of goods.

The fairs of Scania reached the zenith of their economic importance around 1370–1380. At this time, herring from Scania dominated the entire European market, from Lemberg/Lvov in the east to Wales in the

⁹⁸ Jahnke (1997) 6–21.

⁹⁹ Cf. HR I.1, 510, 467–470; HR I.2, 147, 155–156; HR I.2, 150, 159 ff.; HR I.2, 157, 171 f.; Jenks (1992) tom, II, 482, 486–487.

¹⁰⁰ Jahnke (2000) 90–94.

west, from northern Norway to Italy and Spain in the south.¹⁰¹ After this high point, a 250-year period of decline began for the fairs, in which at first Scania fell to the status of a little-used regional fish trading centre; the fairs were finally closed after the Swedish occupation of Scania in 1658. This decline of the fairs of Scania, leading to the eventual demise of the trans-regional herring fishery there in 1658, stemmed primarily from economic factors. The rise of this fish trade centre into a fair was based on the fact that, in addition to the purchase of herring, there were other trading possibilities on offer which made this fishing region much more attractive than any other; its decline was similarly based, since Wendish competitors increasingly reduced these other trade possibilities. The rise and fall of the fairs of Scania had no biological basis, as preceding arguments have shown.¹⁰² In the fifteenth century there were indeed noticeable fluctuations in the herring stocks of the Sound, but these had existed previously without having led to a serious slump in the fairs. It is possible that a reduction in the herring stocks accelerated the decline of the fairs, but this remains to be proven.

Catch size

The difficulty in discussing a reduction in the herring stock in the Sound in the later Middle Ages arises primarily from the lack of serial and thus statistically useful sources; most information on the amount of the entire catch is thus based on estimates. In one of the most recent examples, Poul Holm estimated in 1996 that Danish herring exports in the Middle Ages amounted to at least 100,000 Rostock barrels per year,¹⁰³ or 84,000,000 individual herring. There are, however, only two toll rolls that deal directly with the fish trade at the fairs of Scania; thus every estimate is based on very limited data.

In 1375 the merchants who were assembled at Malmö exported 32,571½ Rostock barrels of herring into the Baltic;¹⁰⁴ their colleagues from the North Sea exported 18,720 Rostock barrels¹⁰⁵ from this port

¹⁰¹ Jahnke (2000) 227–272.

¹⁰² This topic always comes up in discussion. No proof of this theory has yet been presented.

¹⁰³ Holm (1996) 177–180; Holm and Bager (2001) 107–111.

¹⁰⁴ Jahnke (1997).

¹⁰⁵ Jahnke (2000) 151, note 635.

alone.¹⁰⁶ In 1494 fishermen at Skanør and Falsterbo caught about 60,000 Rostock barrels.¹⁰⁷ The written sources thus give the sense that herring exports from the fairs of Scania were not particularly rich. These figures are, however, increased by the figures gleaned from sources concerning herring imports in certain ports. In the port of Lübeck, for example, merchants paid tolls on 71,230½ Rostock barrels in 1398, on 81,172½ Rostock barrels in 1399, and on 69,975½ Rostock barrels in 1400; this amounted to about 58,779,420 individual herring.¹⁰⁸ In the period from September 1374 to May 1375 the port of Sluis received 12,721 Rostock barrels of herring from Scania; in the same period from 1376 to 1377 it received 24,533 Rostock barrels, and in 1378–1379 22,740 Rostock barrels.¹⁰⁹ These few figures give at least an impression of the yearly catch amounts off Scania, but they also show how large the fluctuations in imports could be and how difficult it is to establish provable and universally applicable pronouncements.

In any case these figures also demonstrate that it was ecologically possibly to fish large quantities of herring from the Sound over many years. In some years the herring stocks in the Sound were so large that a so-called *Stimenbildung* occurred,¹¹⁰ in which so many fish had gathered in so small an area that the water looked as though it were boiling and the fish could be pulled out of the water by hand. In other years, such as in 1402 and 1425, and in the years after 1436, as well as in 1469, 1474 and 1475, there appeared only a few herring off Scania.¹¹¹ The biological reason for this absence has not been fully researched; it is also not clear exactly how many fish are meant by 'some' or 'a few'. Centuries of data demonstrate that herring stocks in the Sound were at a stable level as a general rule; this level sufficed for the demands of merchants serving the European markets.

¹⁰⁶ Under the *ummeland* travellers' privilege, merchants from the North Sea were only subject to a flat tax.

¹⁰⁷ Schäfer (1927) 109, 116; Holm (1996) 179.

¹⁰⁸ Jahnke (2000) 421.

¹⁰⁹ Degryse (1957) 100–107; Jahnke (2000) 421.

¹¹⁰ This phenomenon, first described by Saxo Grammaticus, is often characterized as myth. Nevertheless, statements and pictures from the modern Icelandic herring fishery make it clear that this does occur in intact ecosystems.

¹¹¹ Holm and Bager (2001) 108.

The trade in herring

A wide-ranging net of trade routes stretched out from the fairs of Scania that was able to serve the European market extremely well. The fish were transported by sea from the fairs to the large and important ports of Europe. These functioned as entrepôts of transregional transit trade and were the first link of a long chain of intermediate stations.¹¹² A glance at the ports of the North Sea coast reveals two different trade directions. Merchants from Flanders or the Zuiderzee, as well as those from the Baltic, brought their wares to Sluis or Antwerp, or to other larger ports. These entry ports had two different functions: on the one hand they served as supply centres for the nearby region. Thus, for example, the merchants of Mechelen brought from Antwerp 7,187 Rostock barrels of Scanian herrings in the accounting year 1366–1367; 10,065½ Rostock barrels in 1368–1369; and 1,136 barrels in 1367–1370,¹¹³ enough to supply around 8,211 inhabitants for an entire year with one to two herrings daily.

On the other hand, these North Sea ports performed the function of entrepôts in long-distance trade. For example, 'Dutch' and German merchants brought fish from the ports of the Rhine delta to Cologne, the central herring staple for the entire area of southern Germany. Here the quality of the herrings was tested again by sworn testers, or *Wrackers*, as was the case at other intermediate stations. These *Wracker* then placed their mark, the *Zirkel*, on each barrel. The herring was then traded from Cologne south through several other intermediate stations, such as Frankfurt am Main, Strasbourg, Nuremberg and Linz, to Metz and Basel, and thence to Zürich and other locations.¹¹⁴

All of these trading centres and intermediate stations not only had trade relationships with one another, but they also had guaranteed relationships that concerned the quality of the delivered goods. Consistently high quality was ensured through frequent testing of the wares by the *Wracker*, and these tests were visibly marked by means of brands on the barrels. At the same time there existed the widely used option to make the producer liable if the product did not satisfy the demands of the consumers. In such a case, the council of the city in which the

¹¹² Wismar functioned as an entrepôt for the herring trade in Magdeburg. See Archiv der Hansestadt Lübeck, Reichskammergerichtsakten, K 33.

¹¹³ Comptes du Tonlieu d'Anvers; Jahnke (2000) 422.

¹¹⁴ Jahnke (2000) 253–259.

herring had most recently been sold initiated a procedure of examination in which it established the nature of the flaw and sent a report of it, along with the brand from the barrel, back to the most recent city of purchase. Thus the entire chain of trade was traced back to the initial producer. In southern Germany, for example, the city of Strasbourg collected complaints and brands and sent them twice a year to Cologne. Cologne then wrote to the next intermediate station or to the council of the city in which the producing merchant resided. Finally the producing merchant had to be liable and possibly provide compensation.¹¹⁵ According to this system, the entire European herring market was in a directly dependent relationship, in which the production area in the Baltic and the consumption area in southern Germany were more or less directly linked with one another. This led to the south German areas also being relatively well-informed about political and economic relationships in the north; for example, the chronicle of the city of Limburg tells of internal Scandinavian politics.¹¹⁶ This also explains why in 1368 Cologne was interested in waging war against Denmark.

Conclusion: The medieval herring fishery in the western Baltic

As the foregoing should make clear, the herring fishery in the western Baltic, in the area of Rügen, the Bohuslen and the coast of Scania, developed in the later twelfth century and early thirteenth century from a local phenomenon into an internationally significant large-scale market. This development had its roots in, on one hand, the rising demand across Europe for preserved salt water fish, and on the other hand, the increasingly close linkages between production and trade locations. Because of their location, outstanding for international trade between east and west, the herring fishing grounds of Scania developed into an combined international fish and goods market, which far overshadowed all other fishing grounds in the thirteenth and fourteenth centuries. The fairs of Scania were at this time not only the most important herring market in northern Europe, but also one of the most important goods fairs in the interface between the regions of the Baltic and the North

¹¹⁵ Kuske (1905) 258; Jahnke (2000) 257; Archiv der Hansestadt Lübeck, Reichskammergerichtsakten, H 14.

¹¹⁶ Limburger Chronik, § 155, 82 f.

Sea. Just as trade was internationally oriented at these fairs, so was the fishery, and every year Danish, German, 'Dutch' and Flemish fishermen met there. The international nature of the herring fisheries of Scania was made possible by the fact that the Danish rulers had only a limited control and power over these fairs, because of historical developments. Thus, these fairs were characterized by a free and international market organization.¹¹⁷ The temporary settlement areas of the merchants, the so-called *Vitten*, developed in the fourteenth century into extraterritorial urban emporia on Danish soil and thus formed a peculiarity of medieval trade.

From the thirteenth century to the beginning of the fifteenth, herring from Scania dominated the entire European herring market, from Lemberg/Lviv to Wales, and from Norway into Switzerland and Italy. Herring from Scania was even primarily consumed in those areas that later became centres of the North Sea herring fishery.

The fairs of Scania reached their economic zenith between 1370 and 1380. After this point there began a 250-year period of decline, caused mainly by the policies of the Wendish Hanseatic cities around Lübeck. These cities attempted to keep their competitors from the North Sea and the Baltic away from the fairs, which caused the fairs to lose their significance as an international clearing house. As a result of their displacement, merchants discovered old fishing grounds in the North Sea, either for the first time or once again. Here they brought production standards into line with those of the fairs of Scania and introduced a new product into the European market that dominated the herring trade for the next 500 years: maties.

The fairs of Scania and the herring catch in the western Baltic are an outstanding example of the close interconnection between fishery and market, between cultural changes and new demands, and the extremely close connection and internationality of medieval trade and the medieval fishery.

¹¹⁷ Jahnke (1998).

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CHAPTER SIX

FISH, STOCK AND BARREL. CHANGES IN THE STOCKFISH TRADE IN NORTHERN EUROPE, C. 1360–1560

Justyna Wubs-Mrozewicz¹

Stockfish (dried cod) has a long culinary and mercantile history. If one wanted to follow the medieval stockfish recipes and prepare a dish, the handiest tool to start with would be a hammer. It was used to break the fibres of the stockfish, which resembled more a piece of wood than a foodstuff. Hammers were swung in northern Norway, where the stockfish was produced, in Parisian households, with the advice of stretching this exercise to a full hour, in Germany, where the usefulness of a thread wrapped around the battered piece of stockfish was pointed out, and undoubtedly in other places where stockfish was imported.² The necessity of soaking the stockfish was stressed in several recipe collections. Thereafter, the stockfish could be prepared in various ways. For instance, it could be boiled, as mentioned in the book of Margery Kempe, stewed with ginger and saffron, with cream, onions and lard, or fried with nuts and almonds.³ There were also recipes for stockfish skin and stockfish stomachs with rice, honey and mustard, intended to imitate a beef dish in Lent.⁴ The medieval recipes show that despite its drab appearance, stockfish could be a multi-faceted foodstuff.

¹ I would like to thank Hanno Brand (University of Groningen), Petra van Dam (Vrije Universiteit, Amsterdam) and Christian Keller (University of Oslo) for their comments on the paper. This article is in part based on doctoral research published as Wubs-Mrozewicz (2008).

² Account of Querini from the first part of the fifteenth century. Amund (1908) 883; *Le Menagier* vol 2 ([1966]) 195; Mazzoni (2003) 181. The wrapping of the fish was probably advised to prevent it from falling apart. Staindl (1569). This food preparation technique gave also rise to the expression 'beaten up like a stockfish', see Grimm (1854–1954) 'Stockfisch'.

³ Staindl (1569). See also 'Item Stockvisch mus man plewen vnd einweichen', fifteenth century, in Ehnert (1981) 17, Mazzoni (2003) 181; Feyl (1963) 90.

⁴ Wiswe (1956). See also the section on stockfish recipes in van Winter (2004).

Stockfish found its way to medieval tables in Europe as a result of a large demand for fish and preservable food. The introduction of Christianity had an impact on the European diet. While cereal products, vegetables, fruit and fish could be eaten all year round, religious restrictions were imposed on the consumption of eggs, milk products and meat. The latter could be prohibited for up to 135 days during the year.⁵ Even though the definitions of meat could vary from the modern ones and thereby some meats were allowed during fast, the usual alternative was fish.⁶ The urbanisation and the increase of population in the Middle Ages prior to the plague seem to have played a role in the increased demand for fish.⁷ The limited means of preserving food fostered the demand for and the categorisation of fish. Fresh fish was usually available only at the coast, along waterways and from fishing ponds, otherwise it was perceived as luxury food for the rich. The larger species like pike, salmon, or sturgeon enjoyed such status.⁸ For the rest of the populace, dried or salted fish was the only option as a supplement to vegetal foodstuffs and stockfish was not considered luxury or particularly tasteful food.⁹ However, the durability of stockfish, with a shelf life of five to seven years, and its high nutritional value, made it a sought-after product.¹⁰ It was also much in use as food on ships and during wars.¹¹ The demand for stockfish could be matched by supply: from the Middle Ages the dried cod was imported from northern Norway and Iceland, and from the early modern period salted and dried cod could be brought in from the Newfoundland fisheries.¹² Moreover,

⁵ Van Dam and Van Winter (2003) 385; Montanari (1994); Hoffmann (2001) 141.

⁶ Beavers were qualified as fish, and there could be various interpretations of the rule concerning seals. See Van Dam (2003) 476. Olaus Magnus (1555) 20, 7 on whether seals can be eaten during Lent: 'if the female, after giving birth on the shore, flees to the woods when the hunter attacks her, then one should refrain from eating the meat during the forbidden period; but if it has been driven into the water, one may eat the meat without any concern'.

⁷ Lampen (2000a); Van Dam and Van Winter (2003) 407 and the references there.

⁸ See van Dam (2003) on the categorisation of fish in the Middle Ages. See also Montanari (1994) 80; Hoffmann (2001) 141.

⁹ Van Dam (2003) 493.

¹⁰ Dried cod consists of up to 80% of protein and almost no fat, see Kurlansky (1998) 34. However, fish in general was considered light food in comparison to meat. Montanari (1994) 82. See also chapter two in this volume.

¹¹ Lampen (2000a) 287.

¹² Stockfish production is a freeze-dry process, where day temperature has to be slightly above zero, and at night below. These conditions can be found in northern Norway, in the Lofoten and Vesterålen archipelago. On the Newfoundland fisheries and the conditions for conservation there see also Nedkvitne (1983) 360–361.

the existence of the trade network of the Hanseatic League, and the expansion of the Atlantic trade and fisheries enabled the large-scale stockfish trade. Stockfish became an important product in the medieval and early modern bulk trade.

What place has the stockfish trade attained in research until now? The history of the fisheries in northern Europe has recently received increased attention, especially when it comes to herring.¹³ The interest in cod fisheries and trade, however, has been fragmented. Research on the dried cod trade has concentrated much more upon the Newfoundland fisheries than on the Icelandic and North Sea fisheries and trading centres, and thereby more on the salted and dried cod than on the older tradition of freeze-drying.¹⁴ However, stockfish from northern Norway and Iceland had a vital impact on the economy, trade and diet in Europe. In order to understand the continued popularity of dried cod in the early modern period and the growth of the Newfoundland fisheries and trade, the medieval period and the developments in northern Europe must be analysed. In this article, the supply side of the stockfish trade in the period c. 1360–1560 will be taken up, concentrating on Bergen in Norway. Bergen was the main hub of stockfish trade in the Middle Ages, and in the sources ‘Bergen fish’ is often synonymous with stockfish. The case of Bergen is also interesting since the stockfish trade there underwent several changes in the analysed period: due to fluctuations in population in late medieval Europe, as well as to the emergence of new fisheries, trading centres, and merchant groups. This paper focuses on the consequences of these changes, with special relation to the Bergen case.

Firstly, I will provide an overview of the stockfish trade in Bergen with a look at the various groups of merchants involved in the trade, particularly the Hansards and the merchants from Holland. Secondly, the *changes* in the stockfish trade in the fifteenth and sixteenth centuries will be analysed, with an examination of technological changes connected to the stockfish trade, the emergence of new trade centres, and the *consequences of those changes* for Bergen as a stockfish trade centre. Moreover, changes in prices and volume will be broached. As the paucity of sources does not allow quantitative analysis of the change

¹³ Jahnke (2000) and Lampen (2000a; 2000b). See also the debates in *International Journal of Maritime History* XIII (2001).

¹⁴ Michell (1977) 155. See also the overview in Grafe (2004); Hoffman (2001); Kur-lansky (1998); Thór (1996).

and its effects, the discussion has to be largely based on qualitative sources. The quantitative data used are taken from the extensive study of Norwegian foreign trade performed by Arnved Nedkvitne.¹⁵

The stockfish

The term 'cod' is used as a common denominator for codfish, the most common species of fish of the gadid type. There are ten codfish families and more than 200 species.¹⁶ The ones found in the Middle Ages along the Norwegian coast, and traded abroad, were cod proper (*gadus morhua*), ling (*lota molva*), pollock (*gadus carbonarius*, *gadus virens*) and tusk (*brosmius vulgaris*).¹⁷ These were caught on baited lines, beheaded, split and then gutted.¹⁸ Subsequently, they were dried by hanging from horizontal poles (*stokkr* in Old Norse).

Archaeological finds have shown that the cod fishery has long been part of the subsistence along the Norwegian coast, and that from c. 1100 it started to be commercially exploited.¹⁹ The waters around the Lofoten and Vesterålen islands were particularly fertile ground for codfish, and since the climate there was suitable for the dry freezing of fish, the area became a centre of stockfish production. The fish was brought to Bergen from the end of May until August. Most of the fish was shipped further in late summer or early autumn.²⁰ There was also stockfish production further north in Finnmark, and on Iceland and Norway's tributary islands, which I will discuss further in the paper.²¹

There are many terms used for stockfish in sources from medieval and early modern periods. These can be found in account books, letters, the

¹⁵ Nedkvitne (1983).

¹⁶ Kurlansky (1998) 37.

¹⁷ Bruns (1900) LXX–LXXI.

¹⁸ Hoffmann (2001) 149.

¹⁹ Hoffmann (2001) 145; Simpson et al. (2000) 744; Grøn (1926) 120. On the trading centre in Vågan in the twelfth century see Nedkvitne (1983) 17–18.

²⁰ Bruns pointed out that the fish was brought in two stages: in the end of May, the fishermen shipped the fish caught at Lofoten in the preceding summer and autumn. In the end of July or the beginning of August, the fish which was caught in the winter and dried in the spring was transported to Bergen. In Finnmark the cod was caught in March–May, and dried until July before it was brought to Bergen see Bruns (1900) LXX–LXXII. The end of the trading season for summer guests was on September 14th. Helle drew attention to the fact that there was a fluid transition between the two stages of shipment to Bergen (1982) 358–360, 404–405. On the fisheries and trade of the fish, see also Nedkvitne (1983) 17–18, 365–366.

²¹ Lindbekk (1974) 447.

recesse (records and decisions of the Hanseatic League), recipe books, and even chronicles. However, the differences in the nomenclature seem to be less connected to the type of source than to *who* used the term, as well as to the way of preparation and size of the fish.

For instance, in the Norwegian and northern German sources, there is an overlap in the terminology based on the two ways of cutting and drying of the fish. Fish cut in the back and hung horizontally on poles, usually larger and fatter, was called *rotscher* in the Hanseatic sources, and its equivalent in the Norwegian ones *råskjer* or *raaskjer*.²² *Rundfisch* (*rundfisk*), on the other hand, was only beheaded, gutted and hung in twos by the tails.²³ Both terms were also used for fish from Iceland, which could also be called *noptzen* in the German sources.²⁴

The Hanseatic sources contain also a specific terminology that refers to the size of the fish, for instance in the case of *rundfisch* large lings were called *koningeslangen*, while the smaller ones were *gemeine langen*. There was also a differentiation in the sources between *koningeslobben*, *gemeine lobben*, *rackvische*, *lotvische*, *halfwassene*, *kropelinge*, *titlinge*, all according to size. Most *rundfisch* was transported and sold in pieces, but *titlinge*, as the smallest type, were transported in barrels.²⁵ *Rotscher* was also divided into large, medium and small, the latter not used for export. *Rotscher* was usually transported in barrels.²⁶ It was of vital importance that the fish was well sorted.²⁷

Stockvisch (in various spellings) was a term that occurred in cookery books, but it was also frequently used in Hanseatic sources in reference

²² *Rothscher, rotschar, rotscher*, see Bruns (1900) LXXVI–LXXVII, for instance *Hanse-rezesse* (HR) 4:1 no. 176. *Kulturhistorisk leksikon for nordisk middelalder fra vikingtid til reformationstid* (KLNLM) ‘Fisketilverkning’.

²³ For instance in HR 4:1 no. 176. It was more difficult to dry *rundfisk* properly, and it could therefore acquire a sour taste. Bruns (1900) LXXI. KLNLM 4 ‘Fisketilverkning’.

²⁴ *Nopsen*, see HR 4:1 no. 239 § 3, Bruns (1900) LXXXI.

²⁵ HR 4:1 no. 239 § 3, Bruns (1900) LXXII–LXXIV. The various types are enumerated in for instance HR 2:1 no. 381 § 34. However, there could be differences: from a source of 1477 it is evident that Kampen transported and sold *tijtling* per piece, see HUB 10 no. 592.

²⁶ Bruns (1900) LXXVII. In 1470s it was decided that no ‘losen rosscher’ should be sent from Bergen(,) HR 3:1 no. 255, HUB 10 no. 592 (reaction of Kampen to this decision). This disproves the claim of Lampen (2000a) 296, note 83 that stockfish was not sent in barrels. For more examples of references to stockfish transported in barrels see HR 4:1 no. 239 § 3 (1534).

²⁷ In 1476 the Hanseatic towns decided that a commission was to check whether the fishermen delivered sorted fish, HR 2:7 no. 368.

to trade, often as a synonym to fish from Bergen: *Berghervissch*.²⁸ The term 'stockfish' was very rare in the Bergen sixteenth century account books.²⁹ Norwegian sources much more commonly used the term *skrei*, as well as general terms like fish (*fisk*), dried fish (*torrfisk*), or cod (*torsk*).³⁰ Occasionally, terms like fish from Shetland or Iceland were mentioned.³¹

Other terms in the European sources could be the Latin *strumulus* and *sicci pisces*, while in French sources it was usually *morue*.³² In Flemish sources, *kabeljauw* (*cabbelau*) and its metathesis *bakkeljauw* were used for stockfish. The latter gave rise to the use of the term 'baccalao' in southern Europe.³³ It should be pointed out that the term *bacalao*, used especially in southern Europe from the early modern period on, usually did not denote stockfish (dried cod) from Norway or Iceland, but *klippfisk* (salted and dried cod), which came from non-Scandinavian fisheries.³⁴ *Klippfisk* was not produced on a commercial scale in Norway in the period analyzed, and therefore it will not be discussed here.³⁵ In Italy, the terms *stocfis*, *stochofisso* were used and there are grounds to assume that unsalted dried cod from Norway found its way there in the Middle Ages.³⁶

Bergen as the stockfish trade centre

What makes Bergen the main focus of this paper? Bergen was a centre of stockfish trade from, at the latest, the twelfth century. In 1191, Danish crusaders calling on Bergen stated that stockfish was so bountiful

²⁸ For cookery books, see for instance Staindl (1569), Wiswe (1956), Feyl (1963). Hanseatic sources: for instance HUB 8 no. 310, HR 1:6 no. 254, HR 4:1 no. 116 §§ 172, 174. Also parts of dried fish from a non-gadide family were traded along with the cod and possibly could also be covered by this term. (It were) the so-called *rav* (*raf*, *rave*), fat dried back and fins of halibut (*hippoglossus*), and *rekling* (*rekeling*, *rekelinck*), halibut rashers, see Grøn (1984) 125, HR 4:1 no. 239 § 3.

²⁹ *Stoffisk*, see NRJ 1 p. 39 (1516–1517).

³⁰ NRJ, Grøn and KLNm.

³¹ NRJ 1 p. 596, NRJ 3 p. 561.

³² Lampen (2000a) 281 and 288, Kurlansky (1997) 36.

³³ Hoffmann (2001) 153 and 167 n. 101.

³⁴ Lange (1979), Grafe (2004), Michell (1977).

³⁵ It began to be exported from the 1740s see Christensen and Nielssen (1996) 156.

³⁶ Lange (1979).

in Bergen that it could hardly be weighed.³⁷ Bergen gained the staple market position due to its good westwards location, in-between the producers of stockfish and the final destinations of the products, namely England, Germany, the Low Countries, northern France and the Baltic.³⁸ This position was strengthened by the fact that Iceland became part of the Norwegian dominion in the thirteenth century, and fish from there (as well as from the tributary islands: Shetland, Orkney and the Faeroes) was to be traded via Bergen. Around 1300, the staple market position became institutionalised.³⁹ One reason was the royal decision that German merchants were forbidden to trade north of Bergen, on Iceland or the tributary islands.⁴⁰ However, it has to be pointed out that the staple requirement was intended for foreigners, not for denizen merchants living further north, for instance in Trondheim (Nidaros), or on the islands.⁴¹ Stockfish became the most important export product from Bergen. It was vital as an exchange for grain, which was deficient in western and northern Norway throughout the Middle Ages.⁴²

Who were the stockfish traders in Bergen? The groups can be roughly divided into Germans (or more broadly Hansards), other foreign merchants, and local merchants.⁴³ They were not involved in the fishing itself: the fish was provided by Norwegian fishermen (*nordfarere*). The first Germans who traded with stockfish in Bergen were mentioned in twelfth century sources.⁴⁴ They were probably from the Rhine area, as written and archaeological evidence suggests.⁴⁵ From the thirteenth century, merchants from (primarily) Lübeck and the Wendish towns took over, and from the fourteenth century they received privileges as particular towns and as members of the Hanseatic League.⁴⁶

³⁷ Helle (1982) 169–170, *Scriptores minores II* (1922) 475 ('siccorum piscium, qui uocantur *skreith*, tanta copia, ut mensuram excedet et numerum'). KLNLM 'Fiskehandel'. Prices and quantities in the Bergen trade will be discussed in the last section.

³⁸ Stockfish was eaten in medieval Poland, see Dembińska (1963) 227 f. However, it was also produced in the Baltic, see HUB 4 no. 1017, Nedkvitne (1983) 92.

³⁹ Helle (1982) 346–353.

⁴⁰ 1282: NGL 1:3 no. 2, DN 5 no. 23 (1294), NGL 1:3 no. 53, 83.

⁴¹ Helle (1982) 353.

⁴² Nedkvitne (1983) 163, Henn (1996) 28 ff.

⁴³ There were also foreigners who settled permanently in Bergen and thereby conducted trade as locals.

⁴⁴ *Scriptores minores II* (1922) 475–476.

⁴⁵ Helle (1982) 164.

⁴⁶ Helle (1982) 378. See the 1250 trade treaty with Lübeck in DN 5 no. 4.

The strong position of the Hansards in Bergen (called *Bergenfahrer*) was due to efficient organization, available capital and trade networks that guaranteed supplies.⁴⁷ Stockfish export was initially only allowed for those foreigners who brought the deficient grain products, and the Hansards were able to cover the demand through import from the Baltic region.⁴⁸ The Hanseatic merchants were gathered in the *Kontor*, an (in practice) independent colony on the Bergen ground, where they stayed both in summer and in winter.

The *Kontor* was established in the 1360s, and along with it the credit system that bound the Norwegian fishermen to particular trading firms within the *Kontor*. The fishermen were guaranteed supplies of grain and other products even in the times of less abundant catches of fish, while the merchants did not have to look for fish suppliers each season and compete with other merchants. It was forbidden within the *Kontor* to trade with a fisherman who was indebted to another merchant. A fisherman was free to choose his trade partner only when he had discharged a debt or when his new trade partner paid it for him.⁴⁹ In 1545, the *Kontor* traded with c. 300 fishermen.⁵⁰

The German merchants exported the fish not only to Lübeck and other Hanseatic harbours, but also to England.⁵¹ The most dominant group in the *Kontor* were the Lübeck merchants,⁵² but there were also merchants from other Wendish towns (Rostock, Wismar, Hamburg, Lüneburg, Stralsund), Bremen and the Overijssel towns Kampen, Deventer and, to a lesser degree, Zwolle. However, there was a significant difference in terms of fish trade between the Wendish and the Overijssel towns. The latter did not bring grain to Bergen and they were not supposed to trade directly with the Norwegian fishermen. Instead, they were to

⁴⁷ Helle points out that the rights of the Hansards in Bergen never exceeded the rights of the local merchants, see Helle (1982) 388.

⁴⁸ 30.07.1316 HUB 2 no. 284, Bruns (1900) VI.

⁴⁹ Wubs-Mrozewicz (2005).

⁵⁰ Schreiner (1941) 189f.

⁵¹ Nedkvitne estimates on the basis of the English toll rolls that in the period 1365–1400 c. 450 tons of fish were brought by Hanseatic merchants to England, which would be twice as much as to Lübeck at that time, see Nedkvitne (1983) 159. See also Helle (1982) 385.

⁵² Amongst others through the organization of the Lübeck *Bergenfahrer* guild, see Bruns (1900) XX.

buy their fish from other Kontor merchants.⁵³ That was not always the case, as the complaints of the Lübeckers bear witness.⁵⁴

There is also twelfth century evidence of English trade in fish in Bergen, and until the beginning of the fifteenth century, i.e. when they started sailing to Iceland (see below), they were the second most important group in Bergen, and clashes with Hanseatic merchants were frequent. After the English became involved in the stockfish fisheries and trade in Iceland, the Hansards did not perceive them anymore as a major threat in Bergen, but English trade continued to some extent in the fifteenth and sixteenth centuries. The reorientation of the English towards Iceland and the islands in the fifteenth centuries has been seen as one of the reasons for the demise of the Hanseatic Bergen-Boston trade.⁵⁵ In the early period Danish, Swedish, Flemish and Gotland traders also appeared in Bergen,⁵⁶ while in the late Middle Ages merchants from Danzig joined in the stockfish export from Bergen.⁵⁷ Another group of foreigners in Bergen were Scotsmen, though stockfish trade was not their primary interest.⁵⁸

The Hollanders, mostly *Bergenvaarders* from Amsterdam, came to Norway in the 1430s.⁵⁹ The royal privileges did not allow them to expand their trade the way they did in the Baltic,⁶⁰ but they did open up for trade in the north of the country and in Iceland, as will be discussed below. The Hollanders were first of all interested in fish exports from Bergen.⁶¹ Even though they had become important participants in the grain trade from the Baltic by the sixteenth century, they did not bring

⁵³ 1476: HR 2:7 no. 391. Schreiner (1941) 52. NGL 2:2 p. 737 ff. art 24.

⁵⁴ For instance HR 2:6 no. 187.

⁵⁵ Helle (1982) 167, 376, 788–792, Nedkvitne (1983) 105–130, 359–360.

⁵⁶ Helle (1982) 377–378.

⁵⁷ Nedkvitne (1983) 92–97.

⁵⁸ Helle (1982) 804–805.

⁵⁹ Amsterdam *Bergenvaarders* appeared in a source of 1438, see HR 2:2 no. 264, but the earliest evidence of the existence of a guild is from 1486, see Breen (1902) 217 ff. In reference to Amsterdam and the province of Holland, the terms ‘Hollanders’ and ‘Hollandish’ are used. The term appears often in sources as a synonym to Amsterdammers. The modern term ‘Dutch’ is avoided on purpose as it covers a larger area.

⁶⁰ For a comparative analysis of the Hanseatic and Hollandish rights in Bergen in the fifteenth and sixteenth century, see Wubs-Mrozewicz (2005).

⁶¹ The stockfish imported by the Amsterdam *Bergenvaarders* was sold both in the Low Countries and in Germany, see General State Archives of Brussels, Audience 1656/4 (1544).

any noteworthy amounts of grain to Bergen.⁶² The scope of their fish trade in Bergen was limited, on the one hand, by royal decisions on the number of ships, tenements and merchants allowed, as well as on restrictions in trade with fishermen,⁶³ and on the other by the credit system of the Germans. As a result, Hollanders in Bergen could legally buy stockfish only from fishermen not bound by Hanseatic credit, from Bergen burghers and from the Norwegian officials.⁶⁴

Stockfish trade abroad by local merchants can be divided into periods of activity, and lesser or no activity. The early active period can be documented for the twelfth century. Norwegians (next to foreign merchants) exported their stockfish themselves to English harbours, to the Baltic and north-western Europe. Apart from farmer-merchants, the clergy, the representatives of the King and noblemen were also involved in stockfish commerce. This active Norwegian foreign trade continued until the first part of the fourteenth century.⁶⁵ Local trade also included active trade among inhabitants of Iceland, the Shetlands, the Orkneys and the Faeroe islands, who brought the fish to Bergen.⁶⁶ Trade by the Bergen inhabitants with northern Norway continued in a limited degree throughout the fifteenth century, but their trade with Iceland decreased substantially.⁶⁷ The second phase of the active fish trade of the Bergen burghers came in the sixteenth century. In its first phase, ships were mostly sent to Finnmark,⁶⁸ and from c. the 1540s to the Lofoten and Vesterålen islands off the coast of Norway.⁶⁹ The local Bergen trade included merchants who bought up fish from fishermen coming from the north, who went north to fetch the fish and those who

⁶² Nedkvitne (1983) 142.

⁶³ In 1470, they were restricted to two tenements on the opposite side of the Bryggen Wharf (Stranden), see DN 7 no. 471, HR 2:6 no. 432, NGL 2:2 no. 127.

⁶⁴ The examples of fish sold to Hollanders are abundant: NRJ 2 pp. 571–574, NRJ 1 pp. 243 and 470.

⁶⁵ Nedkvitne (1983) 16–61, Helle (1982) 364–370.

⁶⁶ Helle (1982) 165 and 804. Shetland and Orkney were pawned to Scotland in 1468–1469 as a result of partly unpaid dowry of the daughter of Christian I, married to King James III of Scotland.

⁶⁷ Helle (1982) 807–811.

⁶⁸ Lindbekk (1974) 447.

⁶⁹ The upswing happened after the after the rights of the burghers were upheld in the royal privileges of 1528, see Fossen (1979) 15, DN 8 no. 742, NRR 1 p. 14 f. Lindbekk claimed that the shift in the Lofoten trade of the Bergen burghers was due to the introduction of the reformation, as until then the trade was dominated by local fishermen and indirectly the clergy, see Lindbekk (1974) 447.

exported it abroad themselves. Again, clergy and the local authorities in Bergen were also involved in selling fish, both to Hansards and other foreigners like Hollanders.⁷⁰

Technological change: stockfish mills

Two Hanseatic sources from the beginning of the sixteenth century mention a technological change in the stockfish business. It was the introduction of a device in southern Germany, which the Hansards called *molen*: mill. The purpose was to make the fish softer by hammering it, just as it had been done for centuries by hand. Here, however, it could be done on a much larger scale than domestic use. Thereby a cheaper, 'enhanced' Icelandic fish could rival the Bergen fish:

It is also true that among the southern Germans, who usually buy and transport the fish, there is no demand for it [the Bergen fish] nowadays, and they have learnt a special way to make a mill, which batters the Icelandic fish and makes it softer. And it has come so far that they much more prefer Icelandic to Bergen.⁷¹

This type of late medieval or early modern mills has to my knowledge not been discussed in literature on mills, probably due to the paucity of sources.⁷² The sole references to be found are *Stockfischklopffer* and *Stockfischmühle* in the German dictionary of the Grimm brothers, categorising it as a stamping-mill, *Stampfmühle* (i.e. in opposition to a grinding mill).⁷³ It is not clear whether they were synonyms, and whether it was a small device for home use or a large watermill with

⁷⁰ The examples from the account books are abundant: NRJ 2 pp. 571, 572. NRJ 1 p. 231 (sold to Hansards) and NRJ 2 pp. 571–574, NRJ 1 pp. 243 and 470 (sold to Hollanders).

⁷¹ 'Idt is ock war, dat de Overlender [southern Germans], de den visch plegen to kopen unde to vorforen, dar [the Bergen fish] itzundes nicht nafragen, unde hebben suderge wise geleret un molen gemaket, den Islandeschen visch to kloppen unde weck to maken. Unde is so wyde gekomen unde so depe ingereten, dat se ungelike lever Islandeschen also Bergervisch hebben wyllen'. 'Gebreke...' in Bruns (1900) 211–213. Compare Häpke (1914) 35 and Bruns (1900) LXXXI. The second source is Archive of Lübeck, Bergenfahrer no. 1348. The text is very similar, but not identical with 'Gebreke'.

⁷² It has not been a topic of research and remains largely unknown, personal remark of Kurt Horst (University of Aachen). The recent extensive publication of Adam Lucas (2006) on mills in Antiquity and the Middle Ages does not mention stockfish mills.

⁷³ Grimm (1854–1954).

trip-hammers. Possibly, it could be both: in the second document on the Icelandic fish, 'molen offte instrumenten' are mentioned.⁷⁴ In England, water-mills with hammers became very common by the end of the sixteenth century.⁷⁵ A stockfish mill dating back to 1450 (which is still in use) in Codroipo in northeastern Italy is a water-mill.⁷⁶ The location of stockfish mills in southern Germany is not unlikely as it was an important market for stockfish.⁷⁷ In a fifteenth century cookery book, *Registum coquine*, stockfish is presented as typical southern German food, and most recipes for stockfish dishes appear in German sources.⁷⁸ There are numerous Hanseatic sources which indicate vivid trade.⁷⁹ Unfortunately, no remains of such mills have been found in southern Germany. Stockfish mills might have been perceived by contemporaries as a vital change, but the limited sources do not allow to gauge the actual impact these devices had.

New stockfish trading centres and new participants in the trade

The most conspicuous change was that stockfish from places other than Bergen started to be exported, and reached markets that had previously been dominated by Bergen stockfish. Most present in the sources was the expansion of the Icelandic stockfish. Fish export from Iceland was mentioned from the 1290s, and an upswing can be assumed from the 1340s. At this time, the exports further to continental Europe went via Bergen, which was connected to the fact that Iceland and the tributary islands belonged to Norway from the 1260s.⁸⁰ The presence of the Hanseatic merchants in Norway from the thirteenth century and expansion in the fourteenth century (see above) has been seen as a trigger in the transition 'from the age of farming to the age of fishing' in Iceland.⁸¹ However, fish export from Iceland to Bergen was in Norwegian hands. From the beginning of the fifteenth century, Bergen ceased to be the sole destination of Icelandic fish. The English started to import Icelandic stockfish and were engaged into their own cod fishery there. As a

⁷⁴ Archive of Lübeck, Bergenfahrer no. 1348.

⁷⁵ Pratt (1914) 784.

⁷⁶ Mulino di Bert/Mulino Zoratto, booklet of the Comune di Codroipo.

⁷⁷ Kuske (1905) 269.

⁷⁸ Van Winter (2004) 146–148.

⁷⁹ For instance, HR 2:7 no. 368.

⁸⁰ Helle (1982) 307–308. KLN M Fiskehandel, Island. DN 2 no. 235.

⁸¹ Hastrup (1990) 67–68.

consequence they became less interested in the Bergen trade. Most of the English stockfish demand was from then on covered by Icelandic fish.⁸²

Hansards appeared in Iceland and the tributary islands of Norway in the beginning of the fifteenth century.⁸³ At first, they exported the stockfish to England, but from the second part of the fifteenth century they started to bring the fish to Germany.⁸⁴ Hamburg and Bremen were especially active in the trade, which was at times prohibited and at times tolerated by the Hanseatic towns assembling at the Diets (Hanseatic meetings).⁸⁵ There were also merchants from Lübeck who engaged in the Iceland trade (*Islandes varer*), something that has not received much attention in research.⁸⁶ However, the Hanseatic *Bergenfahrer* from various towns and especially Lübeck, as a group concerned with *Bergen* stockfish trade, were consistently against Hanseatic trade in Iceland,⁸⁷ and also Norwegian local authorities objected to royal decisions which opened up trade in Iceland.⁸⁸

The objections of the *Bergenfahrer* concerned two matters. The first was connected to the fact that fish from the Shetlands and Iceland was considered of inferior quality since it was harder, and thereby it was cheaper.⁸⁹ It might have been due to less favourable weather conditions for freeze-drying in Iceland than the Lofoten and Vesterålen archipelago.⁹⁰ Lübeckers complained that the insular fish was mixed with *Bergen* fish, and put the Norwegian stockfish in disrepute.⁹¹ Indeed, southern and central German towns complained about the quality of

⁸² The Hansards did not perceive the English as their most dangerous rivals in the fifteenth century. However, there is also other evidence of continued trade in the fourteenth and sixteenth centuries, see Helle (1982) 790–791. See also Nedkvitne (1983) 359–360.

⁸³ Schreiner (1941) 43, NGL 2:1 no. 377, nr 385, DN 20 no. 789.

⁸⁴ Baasch (1889) 6–16, Gelsinger (1981) 193.

⁸⁵ For instance the trade of Bremen was accepted in 1525, see HR 3:9 no. 131 § 161. Bremen argued there that the fish was brought to different markets than the fish from *Bergen*. Also the fact that Hollanders and others were engaged in the Iceland trade could be accepted as an argument, see HR 3:3 no. 353 § 152. See also Cieślak (1952) 172–173.

⁸⁶ See the discussion in Bei der Wieden (1994).

⁸⁷ The protests about Hanseatic sailing to the islands started already in the beginning of the fifteenth century, see for instance LUB 5 no. 593 (1416), but became much more intensive in the second part of the century. See for instance HR 3:4 no. 68. Bruns (1900) 213 (1514).

⁸⁸ DN 3 no. 931.

⁸⁹ Bruns (1900) LXXXI and p. 213.

⁹⁰ Christian Keller (University of Oslo), personal remark.

⁹¹ Schreiner (1941) 45, HR 3:3 no. 353 § 85.

stockfish.⁹² Secondly, the Hansards in Bergen claimed that the Icelandic and insular stockfish forced their commodities off the German market, in which they saw one of the direct causes of problems in Bergen. Their statements equated the stockfish trade outside of Bergen with the demise of the Kontor.⁹³ This view could be balanced by the replies of Bremen that fish from Iceland was only brought to markets where there was no Bergen fish, or it would be too expensive for the customers.⁹⁴ However, in order to answer the question whether Bergen fish was indeed ousted from the markets in southern Germany, a thorough study of stockfish trade there should be made. This is beyond the scope of this article.

Stockfish became the subject of commercial rivalry, both within the League and outside. Hollanders had already started trading with Iceland in the first part of the fifteenth century, thus at the same time as they appeared in Bergen. Despite the royal prohibitions, they continued to trade there, until they were officially allowed to do so in 1490.⁹⁵ The interests of Amsterdam in the Icelandic trade must have been substantial, since they considered the offer of Christian II of taking Iceland as pawn in 1518.⁹⁶ In their statutes, the Amsterdam *Bergenvaarders* first mentioned only Bergen fish, but later included also Icelandic and insular fish in their trade.⁹⁷ The Hollandish trade in Iceland was also a thorn in the eye of the Hanseatic merchants in Bergen, who again called it a detriment to their Kontor.⁹⁸

What made Icelandic fish attractive for the merchants and the customers on the continent? The lower price must have certainly played a role. However, the difference in quality meant that the Bergen and Icelandic stockfish were seen as two different categories. This probably changed with the advent of the stockfish mills, mentioned above. If the harder Icelandic fish could be battered to a softer state so efficiently that the end

⁹² HR 2:7 no. 368.

⁹³ 'Gebreke', in Bruns (1900) 211–213.

⁹⁴ HR 3:9 no. 131 § 161. Compare Kuske (1905) 267 on the trade of Bremen burghers in Cologne.

⁹⁵ In 1439, Amsterdammers sailing from Iceland were assaulted at the Irish coast, see DN 20 no. 823. The literature on the trade of Hollanders in the period analysed is limited: Thomas (1935) has partly treated the subject, but for instance neither Thór (1996) nor Gelsing (1981) mention Hollanders in the sections devoted to late medieval fish trade on Iceland. Thomas (1935) 8. DN 6 no. 609, Handvesten, pp. 55–56.

⁹⁶ DI 16 no. 259 (ca. 1518) and 261. Allen II (1864) 502–503, 568–509 and note. Christian II made a similar offer to the English.

⁹⁷ Handvesten, p. 1189.

⁹⁸ Bruns (1900) 213.

product was not worse than the more expensive Bergen fish, it could indeed become more popular—as the Hansards stated themselves.⁹⁹ However, there is no quantitative evidence that could show the extent of such a change. Other factors which must have made the Iceland trade enticing for the Hamburg, Bremen and Holland merchants was that since the Icelandic fishermen were not bound by the credit system in Bergen from the beginning of the fifteenth century, almost no fish was brought from Iceland to Norway.¹⁰⁰ The merchants coming to Iceland were thus free to choose their fish suppliers. According to Hansards in Bergen, another advantage their rivals gained was that they did not have to bear the costs of a permanent settlement.¹⁰¹

Another change in the stockfish trade was that direct trade north of Norway increased considerably, and Trondheim began to be perceived as an alternative to Bergen in the sixteenth century. The fishermen started to bring their fish to Trondheim in the 1530s, and from the 1540s there was a significant increase in trade.¹⁰² As mentioned earlier, trade north of Bergen was forbidden to foreigners. The Kontor merchants did not attempt to lift the ban as it enabled them to control the stockfish trade in one place. The Hanseatic towns prohibited such trade during their meetings. However, there were instances when Hansards—both from the Kontor and outside of it—traded in Trondheim and in the north. Again, as in the case of Iceland, Hamburg and Bremen were mentioned in the complaints, but the decisions on the Hanseatic diets seem to be more consistent in banning it.¹⁰³ They also fiercely opposed the trade of Hollanders and local burghers of Bergen there. In 1498, the rights of the Hollanders were equalled with the rights of the burghers.¹⁰⁴

Even though the rights of the Hollanders in Norway were altogether limited when it comes to the scope of the trade in Bergen in the first part of the sixteenth century, the right to equality was never formally renounced. This was used as an argument that they were allowed to trade in Trondheim, just like the local burghers, and even King Christian III

⁹⁹ 'Gebreke...' in Bruns (1900) 211–213 and Archive of Lübeck, Bergenfahrer no. 1348. Compare Häpke (1914) 35 and Bruns (1900) LXXXI.

¹⁰⁰ Helle (1982) 790. According to Schreiner, the fishermen of the tributary islands, on the other hand, were debt-bound by the Kontor, because the fish continued to be brought to Bergen, see Schreiner (1941) 44.

¹⁰¹ Bruns (1900) 213 (1514).

¹⁰² Schreiner (1941) 220–221.

¹⁰³ HR 4:1 no. 176. HR 4:1 no. 344 §§ 89, 103–106.

¹⁰⁴ The 1498 right: Handvesten, p. 56, NGL 2:3 no. 126, Wubs-Mrozewicz (2005).

(reigned 1534/1536–1559) was unsure how to interpret the situation.¹⁰⁵ The Kontor merchants, on the other hand, were clear in their disapproval of the Trondheim trade of the Hollanders and letters of complaints were frequent.¹⁰⁶ For the 1540s, there is evidence of three to ten ships sailing between Trondheim and Amsterdam. The Kontor merchants in Bergen even suspected that the Hollanders were establishing a rival settlement there, but apart from those suspicions there is little evidence that it was a policy of the Hollandish stockfish merchants.¹⁰⁷ The *Bergenfahrer* saw a direct effect of the trade north of Bergen by merchants from Hamburg, Bremen, Overijssel and Holland: it undermined the credit system of the Kontor (imported goods supplied to Norwegian fishermen on credit, on condition of exclusive supply of fish), as debt-bound fishermen sold their fish to others than their creditors. This, they feared, would cause the demise of the Kontor.¹⁰⁸

What about the threat posed by other fisheries? There is no evidence that the Hansards perceived the Newfoundland fisheries as rivals to the Bergen trade in the period analysed here. The reason was probably that the cod was destined for other markets: cod from Newfoundland was brought to the western part of the British Isles and southern Europe (south of Normandy), while Icelandic and Norwegian fish went to north-west and northeast Europe.¹⁰⁹ Neither are there complaints about the budding Doggersbank cod fishery of the Hollanders, probably because it first started in the middle of the sixteenth century.¹¹⁰

Changes in Bergen

From the point of view of the Hansards, the fetching of fish outside of the Kontor meant a change, namely the (partial) loss of control of the fish trade. They often called it dramatically the *fordervinge* of the *nedderlage*: the ‘demise of the settlement’, i.e. the Kontor. Such complaints

¹⁰⁵ Schreiner (1941) 221. In the 1544 on the occasion of the peace of Speyer, earlier rights were confirmed, see DNT 1 p. 466 § 12.

¹⁰⁶ See for instance HR 4:2 no. 86 § 588.

¹⁰⁷ Archive of Lübeck, *Bergenfahrer* no. 877, Schreiner (1941) 220–221.

¹⁰⁸ HR 4:1 no. 176, HR 4:1 no. 344 §§ 89.

¹⁰⁹ Michell (1977) 161), Nedkvitne (1983) 361.

¹¹⁰ In 1562–3, there were c. 100 ships involved in cod fishery at the Doggersbank, see Häpke (1914) 34. It was a ‘lesser fishery’ in comparison to herring, see de Vries (1997) 254.

were particularly intensive in the 1540s, thus they coincided with the rise of the Trondheim and Bergen burgher trade. However, did those changes really imply the downfall of the Kontor? The Kontor did not cease to exist in the sixteenth century. In fact, it continued to function long after the Hanseatic League disintegrated and it retained a strong mercantile position. Unlike in the Baltic, the Hollanders did not gain ground in Norway after the peace of Speyer (1544). Yet it does not mean that there were no changes in Bergen: from about the middle of the sixteenth century the Lübeckers lost their dominance in the Kontor, and Bremen merchants gradually took over. It corresponded with the general development in northern Germany where the trade of Hamburg and Bremen expanded, while there was gradual stagnation in Lübeck.¹¹¹

Did the rise of foreign stockfish trade in Trondheim and in Iceland mean a decline of the Bergen trade (as a whole) in terms of prices and volume? Were there changes in Bergen that should be regarded in this context? In a letter of 1481 the Norwegian royal council objected to the King's decision to permit certain merchants to trade with Iceland, arguing that it was against the interests of Bergen.¹¹² Another major change was the drop in stockfish prices. In the years after the Black Death, stockfish prices were high. Nedkvitne assumes that they started to fall in the period between 1405 and 1440.¹¹³ But until the 1470s, one kilo of stockfish was still worth as much as six to seven kilos of rye, a highly profitable exchange rate for the Norwegian fishermen.¹¹⁴ Recent scholarship has shown that, thanks to the stockfish production and the trade, the coastal communities in the north were better off than their inland compatriots, something which was visible both through the tax they paid and the costly church art ordered. This contradicts the earlier view that the fishermen were exploited by the Hanseatic traders in Bergen.¹¹⁵

In the sixteenth century the prices continued to fall: the exchange rate of fish to grain was 1:3 in the beginning of the century, and 1:2 in the end.¹¹⁶ When it comes to the volume of stockfish export from Bergen, there are no signs of decline in the period analysed. However, it has to be

¹¹¹ Nedkvitne (1983) 195, Hauschild (1997) 414.

¹¹² DN 3 no. 931.

¹¹³ Nedkvitne (1983) 341.

¹¹⁴ Ubbens (1997) 25–26. Compare Nedkvitne (1983) 377–382.

¹¹⁵ Nordhagen (1994) 42, Nedkvitne (1983) 370–384.

¹¹⁶ Ubbens (1997) 25–26.

stressed that quantification is extremely difficult due to the lack of serial data. The estimates for the volume of the Bergen trade in the second part of the fourteenth century are that at least 1,000 tons of stockfish were exported yearly, but it could range up to twice as much. There are no quantitative sources for the fifteenth century, but the estimates for the sixteenth century have been that it amounted to c. 2,000 tons annually.¹¹⁷ Nedkvitne reckons that fish exports from Bergen rose in the period 1520–1650 three to five times, as a result of population increase in Norway and the augmenting commercialisation of the fishery.¹¹⁸ He claims the falling stockfish prices made the fishermen produce more stockfish in order to keep up the income.¹¹⁹

It appears thus that in the end of the period analysed here, prices fell, and the volume of stockfish which passed through Bergen augmented. Nedkvitne put the change in the prices in the context of a general development in the Middle Ages, where the population increase in the fifteenth century drove the grain prices to rise.¹²⁰ The start of the fall in prices was concurrent with the expansion of the stockfish trade: first in Iceland, and then also in the north of Norway. The repeated Hanseatic claims that the cheaper Icelandic fish were more popular than the Bergen fish should not be too easily dismissed.¹²¹ This fact could have forced the prices of Bergen fish down. Altogether, the increased amount of stockfish appearing on the market from different places could have had such an effect. The possible rivalry in prices could have also have had an impact on the amounts of stockfish produced in Norway, using Nedkvitne's argument on the correlation of price to amount here. However, in order to establish clearer links between the changes of prices and the volume of Icelandic and Norwegian stockfish trade, more quantitative data would be necessary, also on the 'demand side', that is the amounts bought and distributed in Europe. It would be highly interesting to conduct local case studies for southern Germany, for instance, especially if the aspect of the stockfish mills could be brought in.

The Trondheim and northern Norway trade and its relation to Bergen should also be analysed in the perspective of the denizen Bergen

¹¹⁷ Nedkvitne (1983) 163–164.

¹¹⁸ The fisher-farmers produced increasingly more stockfish for sale, see Nedkvitne (1983) 195, 384.

¹¹⁹ Nedkvitne (1983) 382.

¹²⁰ Nedkvitne (1983) 382–384.

¹²¹ For instance HR 3:7 no. 39 § 190.

merchants. Their activities in the north certainly meant a change for the staple position of Bergen, but it also meant that within Bergen a new group of active stockfish merchants (re)emerged. Local stockfish merchants in Bergen, sometimes of foreign origin, became increasingly involved in the stockfish trade from the 1540s, and thereby became rivals to the Kontor, as the tensions between the parties indicate. There were several negotiations between the Hansards, the burghers and the King concerning the number of burghers whose ships were allowed to sail north of Bergen on an annual basis.¹²² In the end, a consensus was reached and to a certain extent, cooperation between the Hansards and the local burghers started.¹²³ While the content of the stockfish barrels did not change, the meaning of the term 'Bergen stockfish trade' certainly did: decreased prices, increased volume and new hands handling the trade.

Conclusions

Stockfish—in its many forms and names—was an important part both of the medieval diet and of the medieval trade. Until the beginning of the fifteenth century, Bergen was the hub in the wheel of stockfish trade, spun by the Hansards, but thereafter new centres and new players emerged in the trade. This caused changes in the distribution of stockfish in Europe. The introduction of stockfish mills may have influenced the demand in Europe. Along with other factors like population growth in Europe, those changes may have had an effect on the falling prices and increasing volume of the Bergen trade. Another consequence was the growth of denizen stockfish trade in Bergen.

Stockfish coming from Norwegian, Icelandic and New World fisheries became well-embedded also in post-medieval cuisine. There are numerous early modern recipes for the preparation of *baccalao*, *stocfis*,

¹²² In 1528 and 1541, the burghers were given substantial rights, but in 1545 the burgher trade to the north (of Bergen) was to be limited to 10 ships, and the fish was to be brought to Bergen before it was shipped further abroad, see DNT 1 tillegg I § 2, p. 651. In 1548, the burghers came up with a new interpretation on the 1545 decision that it was to mean north of Trondheim. In the following years the rights of burghers of free sailing north were given and taken several times, see Fossen (1979) 18. In 1560, the restriction was settled at 24 ships, see DNT 1 p. 635 § 1 in Fossen (1979) 19.

¹²³ Lindbekk (1974) 448.

stoccafisso or *stochofisso*, primarily from southern Europe.¹²⁴ In a booklet issued around 1935 by the Propaganda Office for Stockfish in Amsterdam, stockfish salads and fish custard made of stockfish were praised for their nutritious qualities.¹²⁵ Stockfish also made it full circle back to Norway in the form of a southern-inspired dish with dried *and* salted cod, olive oil, tomatoes and other optional ingredients. It goes under the name *baccalao*.

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 Handvesten: *Handvesten der stad Amsterdam*, ed. H. Noordkerk (Amsterdam: 1748).
 HR: *Hanserecesse/Hanserezesse* (Leipzig: 1870–1970).
 HUB: *Hansisches Urkundenbuch* (Halle: 1876–1916).
 LUB: *Lübeckisches Urkundenbuch* (Lübeck: 1843–1932).
 NGL: *Norges gamle Love indtil 1387* (Christiania: 1846–1895).
 NGL 2R: *Norges gamle love. Anden række, 1388–1604* (Christiania/Oslo: 1912–).
 NLR: *Norske Regnskaber og Jordebøger fra det 16de Aarhundrede* (Christiania/Oslo: 1887–1983).
 NRJ: *Norske Regnskaber og Jordebøger fra det 16de Aarhundrede* (Christiania/Oslo: 1887–1983).
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¹²⁴ On stockfish in early modern southern Europe see Grafe (2004). See also the arguments in Lange (1979) for pre-early modern occurrence of stockfish in Italy.

¹²⁵ 'Eenige goede recepten voor stokvisch.'

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CHAPTER SEVEN

THE 'GOLDEN MOUNTAIN': AN ECONOMIC ANALYSIS OF HOLLAND'S EARLY MODERN HERRING FISHERIES

Christiaan van Bochove¹

Introduction

During his entire career Adriaen Coenen, resident of the small Dutch village of Scheveningen, had been active in the fishing industry of his hometown. In 1578 he put part of his extensive knowledge on paper in his *Visboek* (*Fish Book*). It was in this book that he called the herring the 'golden mountain' of the Netherlands.² Coenen was not the only one who attributed so much value to the herring fisheries. In a placard of 9 March 1580 the States General considered the herring fisheries to be one of the most important sources of income for the Netherlands, and in 1610 Sir Walter Raleigh estimated the gross annual income of Holland's herring fisheries at 21.5 million guilders.³ The Dutch historian Hendrik Boelmans Kranenburg showed that estimates like this and those made by previous historians had been too high. He estimated gross annual income around 1600 at about three million guilders. Van Gelder and Van Vliet showed that despite this smaller income profits must still have been good.⁴

These historians all tried to discuss the contribution of the herring fisheries to the Dutch economy. Generally this happened in terms of gross income. As gross income includes goods and services purchased

¹ The data in this contribution will be made available through the website <http://www.iisg.nl/research/haringvisserij.html>. The author would like to thank Bo Poulsen (University of Roskilde) for commenting on a draft version of this contribution. He also benefited from discussions with Jelle van Lottum (University of Cambridge), Daan Marks (International Institute of Social History, Amsterdam) and Bas van Leeuwen (University of Warwick).

² Egmond (2005) 78–82. The original *Visboek* has been digitalised and is available through the website <http://www.kb.nl/visboek>. See also: Egmond (1997) 33, 35; Van Gelder (1911) 57–62. The citation can be found at p. 60.

³ Kranenburg (1946) 24; Van Gelder (1911) 20.

⁴ Kranenburg (1946) 212; Van Vliet (1994) 171; Van Gelder (1911) section IV.

from other sectors, double counting posed a problem. The authors tried to compensate for this, but that did not result in a figure of the value that was truly added to the economy by the herring fisheries in the form of taxes, depreciation, wages and victuals paid to the crew, interest and profits. Moreover, they only constructed a number of benchmarks for gross income and profitability instead of a series of annual observations.

Such estimates are important to the historian for two reasons. Firstly, they can—next to other indicators such as total catch, number of busses and crew size—inform us about the development of Holland's herring fisheries. Secondly, such estimates form a valuable contribution to the larger debate on the development of Holland's early modern economy. The latter is especially interesting to economic historians as it allows for comparisons with the performance of other sectors and with the economy as a whole. This is particularly important since the development of the Dutch economy has been a hotly debated topic. De Vries and Van der Woude, for instance, recently posed that Holland's economy reached its highpoint in 1663.⁵ The development of real wages played a prominent part in their analysis. Real wages are important indicators of economic development, but they cannot inform us about the size of and changes in one particular sector. We can, however, get a better understanding by measuring the value added that was generated in a sector. When we would construct value added series for all parts of the economy and add them up, a gross domestic product (GDP) series for Holland's economy could be constructed. Such a series would enable us to better discuss the development of the Dutch economy.

Examples of a successful application of the methodology include the economies of the Netherlands and Java of the nineteenth and twentieth centuries.⁶ As long as the necessary source materials are available, there are no reasons why this approach could not be used for the early modern period. Van Zanden and Krantz, for instance, have successfully estimated GDP per capita benchmarks for Holland (1510/14) and Sweden (1571) respectively.⁷ Although we already knew that the sea fisheries formed an important part of Holland's economy, estimates like these make it possible to place Holland's sea fisheries in an accurate economic perspective.

⁵ De Vries and Van der Woude (1997) 673.

⁶ Smits, Horlings and Van Zanden (2002); Van Zanden (2003).

⁷ Van Zanden (2002); Krantz (2004).

At the beginning of the sixteenth century, Holland's fisheries created 8.9 percent of total value added. In 1807, however, the fisheries were only responsible for 0.3 percent of total GDP in the Netherlands.⁸ Although the former percentage refers to Holland only and the latter to the whole of the Netherlands, the relative decline is still impressive. Unfortunately, we currently have only two such benchmarks at our disposal.

The current contribution will try to make up for this lacuna and will construct a series of annual value added and profit figures for one of the most important parts of Holland's fisheries: the herring fisheries of the seventeenth and eighteenth centuries. It will do so by developing a flexible model that allows us to incorporate all the relevant variables. This will give an insight into the cost and income structure of this fishery. The necessary data and information on the form of the model are amply available in published and unpublished sources, as the herring fisheries form an exceptionally well-documented case. This has already made it possible to construct a complete catch series for the 1600–1795 period.⁹ This essay will first present an overview of Holland's herring fisheries followed by sections on income and costs. The next section deals with estimating profitability and value added, and will end with a summary of the main research results and some concluding remarks.

Overview of Holland's herring fisheries

The herring fisheries are a seasonal activity that traditionally started on 29 September, but by the late sixteenth century, as more distant fishing grounds could be reached, the starting date was advanced to 24 June. The latter would for centuries be the traditional starting date of the fishing season. From 1604 onwards the season ended on 31 January. Thus, over time, the fishing season was significantly extended.¹⁰ At the beginning of the season the herring ships or busses went to the Shetland Islands and from there on they went further south as the season progressed. At the end of the year the busses could be found off the coast of Great Yarmouth.

⁸ Van Zanden (2002) 148; Smits, Horlings and Van Zanden (2002) 127, 219.

⁹ Van Bochove (2004).

¹⁰ Van Vliet (1994) 5, 46; Boelmans Kranenburg (1979) 135; Van Uytven (1979) 139.

The herring fisheries made use of a specialised ship: the buss. This ship was introduced in the fifteenth century and at first there existed a multitude of types. From the end of the sixteenth century, however, a more or less standard type of c. 30 lasts and a crew of about twelve to fourteen came into use.¹¹

In order to catch the herring a passive fishing method was used. The driftnets (*vleet*) were usually put out at the end of the afternoon or beginning of the evening as the herring only becomes active after sunset. During the night herring became stuck in the nets, which were subsequently pulled back in at dawn.¹² The catch was then cured on board. In this process the internal organs were removed with a sharp knife, after which the herring were salted and put in barrels. Originally, local salt was used, but from the fifteenth century onwards the use of French, Portuguese and Spanish salt rapidly increased. The *College van de Grote Visserij* (Council of the Great Fisheries), which regulated Holland's herring fisheries, normally prescribed that Spanish salt be used. French salt, considered of an inferior quality, was only permitted when there was a shortage of Spanish salt. The addition of salt caused the herring to shrink so that on land the barrels needed to be repacked. From the fourteen barrels that were filled at sea, twelve would eventually remain on shore.¹³

As the local and provincial authorities in Holland were keen to profit from this flourishing industry, they levied taxes on landed herring and participation in the herring fisheries. In many cases the recorded entries have survived and it has recently been possible to add archival materials to published data so that a total catch series could be constructed for the whole of Holland.¹⁴ Catches reached an absolute peak during the first decade of the seventeenth century when about 31,000 lasts of herring—a last consisting of twelve repacked barrels—were landed. The 1620s were a period of declining catches, but a recovery took place during the 1630s and 1640s. From 1650 onwards a structural decline set in. Warfare and privateering, new investment opportunities, scarcity on

¹¹ Unger (1978a); Van Beylen (1970) 126–141; Kranenburg (1946) 15–17.

¹² Pons (1996) 9–10; Kranenburg (1946) 18–19.

¹³ Kranenburg (1946) 20–22; Unger (1978b); Van der Wee (1964–1965); Van Vliet (1994) 170–171.

¹⁴ Van Bochove (2004).

the labour market and changes in the catchability of the herrings have been identified as chief causes of decline.¹⁵

In order to determine the size of the fleet, accurate information on the size of the average catch is needed. Until recently, data were only available for Delfshaven (from 1630s onwards), Enkhuizen (from 1680s onwards) and Vlaardingen (from 1690s onwards). Archival research by the Danish historian Bo Poulsen has resulted in new information for Schiedam from 1600 onwards. It turned out that the average catch during the first quarter of the seventeenth century was much higher than had been thought: the average catch went up to 60 and 70 lasts instead of the 40 lasts assumed in the literature. An estimate of the fleet size based on the total and average catch will thus result in a much smaller fleet than was estimated earlier.¹⁶ These new figures match much more closely the information that Van Vliet found for the average catch in the southern part of Holland, as well as his estimate of the size of Holland's herring fleet.¹⁷ In all, this results in a fleet size of 500 to 700 busses during the first half of the seventeenth century. With a crew of about twelve to fourteen fishermen, the herring fisheries will have employed between 6,000 and 10,000 men in the actual fishing operation.

Income

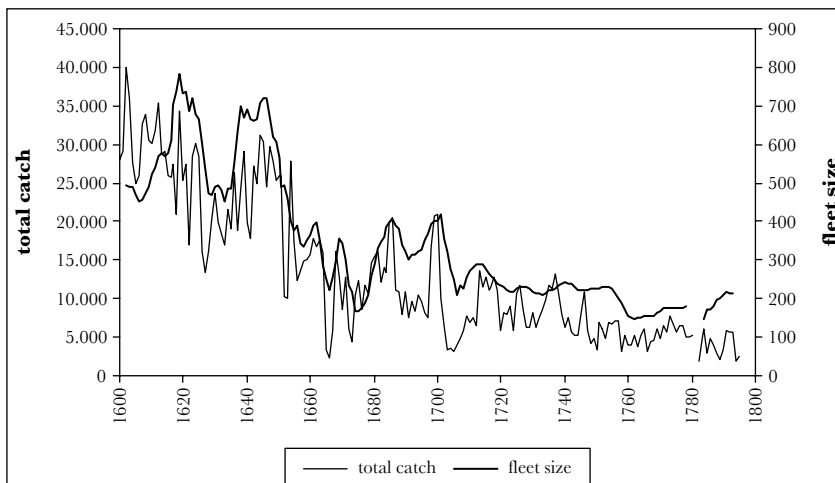
This section will reconstruct the annual income generated in the herring fisheries. The main source of income was of course formed by the sale of herrings, which will be estimated by multiplying the total catch by the average selling price. Other sorts of fish also landed up in the nets and these formed an extra source of income, as did the sale of old

¹⁵ Van Bochove (2004).

¹⁶ Van Bochove (2004) 13–15. I would like to thank Bo Poulsen for making his data available to me. The dataset consists—among others—of the number of vessels that participated in Schiedam's herring fisheries during the first voyage of the season. Generally, data for every second year were recorded. Poulsen found that when busses participated in the herring fisheries they mostly also participated in the first voyage. The number of busses during the first voyage would then give the maximum number of vessels that participated during the entire season and can thus be used to determine the average catch of Schiedam. Both movement and levels were closely related to the available average catch rates. In order to construct an average catch series for Holland, I interpolated the Schiedam series and subsequently determined the average of the four series. See: Poulsen (2008).

¹⁷ Van Vliet (1994) 171; Van Vliet (1996) 244.

Fig. 1. Total catch (*lasts* per year) and fleet size (busses; centered five-yearly moving average) of Holland's herring fisheries, 1600–1795.



Source: Van Bochove (2004) and text.

shipping materials. During the latter half of the eighteenth century the government also subsidised the herring fisheries. These latter forms of income were realised on a per buss level. Therefore the number of busses was established by dividing the total catch by the average catch per buss. The resulting figure was subsequently multiplied with the relevant amounts for subsidy and remaining income.

In order to assess gross income, first a series of herring prices is necessary. Posthumus and Van Vliet published prices of herring and other sorts of fish.¹⁸ Posthumus published prices of full and maties (*maatjes*) herring—the two most common types—on the Amsterdam Bourse (1624–1800) as well as prices paid by institutions in Amsterdam, Leiden and Utrecht.

The price paid for full herring at the Amsterdam Bourse will form the basis of the price series: first, Kranenburg asserts that 85 percent of the catch consisted of this type. He based his conclusion on data for the town of Vlaardingen, but other sources confirm his findings.¹⁹ Second, observations are more numerous for this series. Third, most

¹⁸ Posthumus (1934–1964); Van Vliet (1994) 302–305.

¹⁹ Kranenburg (1946) 194–195; Van Gelder (1911) 34–36, 53–54; Westfries Archief (WA), Oud archief Enkhuizen (OAE) inv. no. 435 (bergnummer 1594).

of the catch was exported and international trade will have focused on the Amsterdam staple market prices. We have to be aware, however, that these prices are wholesale prices and will thus generally be lower than retail prices.²⁰ Moreover, while prices of the second half of the year are most relevant, Posthumus used the monthly quotations to calculate an unweighted average price for the calendar year. Besides, for many years only some monthly quotations are available and these also include some treatment and transportation to Amsterdam. Although the price series of Posthumus contain some restrictions, they nevertheless form the best starting point available.²¹

Because the full herring series is incomplete and only starts in 1624, estimates for the missing years have to be made. Three sources are available: prices paid by the institutions in Amsterdam, Leiden and Utrecht mentioned above; prices paid by institutions along the Meuse estuary (1580–1648); prices paid for other types of fish. For the periods 1600–1660 and 1730–1795 herring prices are available from different sources, but mainly those for Amsterdam and Delft were used. These data allow us to construct a relatively accurate series. For the period in between, however, only some prices of full herring are available, so that the price trend for other types of fish (Leiden and Amsterdam) had to be used to estimate the missing entries.²²

During the sixteenth century—especially after c. 1550—herring prices increased rapidly. Figure 2 shows that this increase came to a halt during the 1660s. Only during the last quarter of the eighteenth century was there again a sustained increase in nominal prices.²³

In addition to herring, account books show that other sorts of fish also landed up in the nets. Sometimes the revenues of this bycatch are included in the general revenues without specifications, but we can also find accounts that do include such specifications. The amounts found in the Enkhuizen accounts range from some tens of guilders to as much as three hundred guilders.²⁴ The accounts of the sixteenth-century

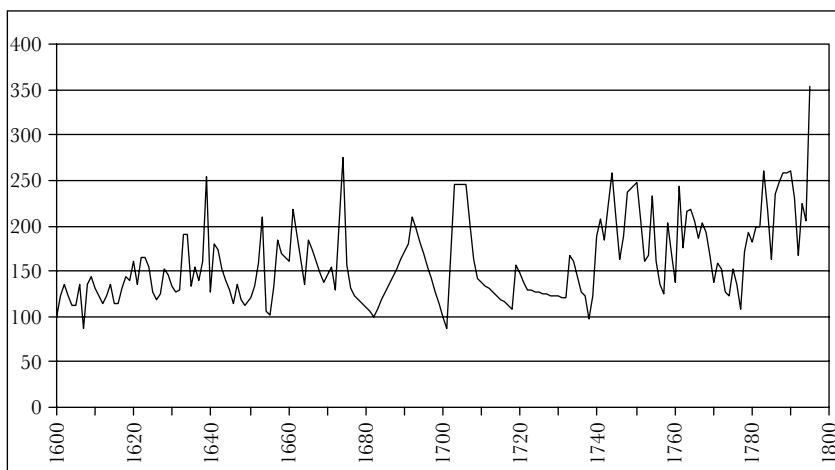
²⁰ Van Vliet (1994) 58–59, 171–172 calculated an average price for a longer period based on purchasing prices of a number of (inland) institutions. Obviously, this leads to some differences for the specific years / periods (c. 1600 and c. 1630) that he researched and the data as presented in this contribution.

²¹ Willemsen (1988) 52; Kranenburg (1946) 193–197.

²² A comparison with Hamburg herring prices (1600–1709) yielded almost identical results. These data were kindly made available to me by Alexander Engel and Hans-Jürgen Gerhard. See: Gerhard and Engel (2006).

²³ Van Vliet (1994) 255–258 discusses the development of herring prices.

²⁴ WA, OAE, inv. no. 435 (bergnummer 1594).

Fig. 2. Herring prices in Amsterdam, 1600–1795 (guilders per *last*).

Source: Posthumus (1934–1964); Van Vliet (1994) 302–305.

Delft merchant/mayor Van Adrichem (1538–1609)—covering the years 1575–1576 and 1590–1604—as well as an account from 1624 show, albeit in a modest way, that this also happened at the beginning of our period.²⁵ Unfortunately, due to a lack of more substantial evidence on this type of income, bycatches cannot be included in our model. We have to keep in mind, however, that it seems to have been a common instrument to raise total income without extra costs.

In addition, the sale of old shipping and fishing materials could generate some extra income. In the present study only the rest value of the herring buss is taken into account, but often we find that such things as used barrels and ropes were still worth small amounts of money.²⁶ Furthermore, participation in the fisheries also generated income during the last quarter of the eighteenth century through subsidies. On 19 May 1775, the States of Holland decided to start subsidising the herring fisheries. This measure was intended to help Holland's fisheries withstand foreign competition. Regardless of the size of the catch and the number of voyages, each buss that sailed out would be eligible to receive this subsidy. Information from different sources has been put together in the following figure.

²⁵ Van Gelder (1911) 35; WA, OAE, inv. no. 428 (bergnummer 1591a).

²⁶ Van Gelder (1911); WA, OAE, inv. nos. 428 (bergnummer 1591 b), 435 (bergnummer 1594).

Fig. 3. Subsidies of the States of Holland, 1775–1795 (guilders per buss).

1775–1776	fl. 500
1777–1780	fl. 400
1781–1784	none
1785–1787	fl. 700
1788–1795	fl. 500

Source: Beaujon (1885) 102–104; Kranenburg (1946) 148–151; Wätjen (1910) 151–154; Nationaal Archief (=NA), De archieven van de colleges van de Grote Visserij, 1578–1857 (1959) (= ACGV), inv. nos. 211, 213; WA, OAE, inv. no. 435 (bergnummer 1594).

All the information on the income structure of Holland's herring fisheries presented above has been combined in figure 4. It shows that a gross income of 3 million guilders around 1600, as was estimated by Kranenburg, was not far off target. This research indicates, however, that during the first half of the seventeenth century gross income tended to be somewhat higher: 3.6 million guilders (or 3.2 million guilders of 1600) probably being more accurate.²⁷ What stands out in figure 4 is the sudden decrease in income after 1624. The average income per buss, however, had already been under pressure for some time.

The sudden decrease in total income of the 1620s could be associated with the large increase in the activities of Dunkirk privateers.²⁸ Perhaps it was this increase that made the owners of fishing vessels look temporarily at other ways of employing their ships. In 1625, for example, we find that a 'hering bysse' was used to pick up timber in the Norwegian town of Drammen. This was done in the midst of the fishing season; arrivals at Drammen were noted at July 9, August 23 and October 12. In a letter from the States General to King Christian IV dated 6 May 1631 we find 'a herringboat transformed into a timber-carrying vessel' [translation CvB].²⁹

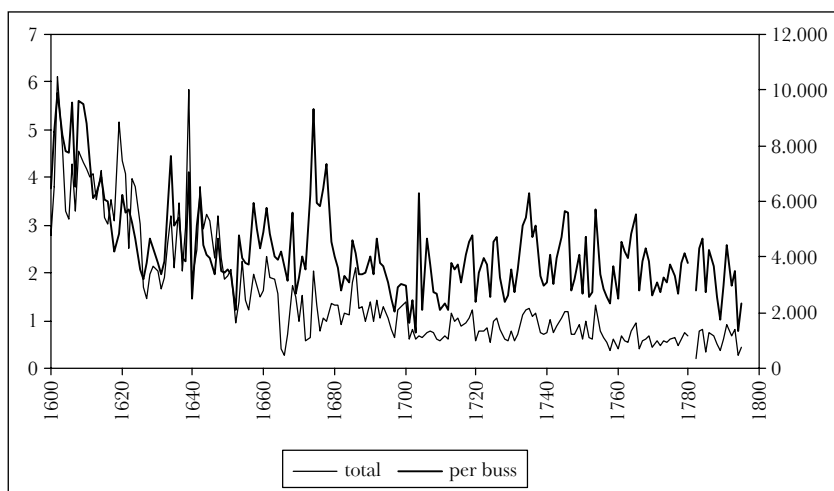
Although losses were heavy, the herring fisheries recovered and the income per buss of the 1630s and 1640s was relatively good. This level could not be maintained, however. With the exception of some years, the average income seems to have been substantially lower than at the beginning of the seventeenth century. The first Anglo-Dutch War (1652–1654) struck a decisive blow to the catches of Holland's herring

²⁷ The data have been made comparable by correcting for inflation. The consumer price index (CPI) that was used can be found in the database 'Value of the guilder' on the Historical prices and wages website (<http://www.iisg.nl/hpw/calculate.html>; consulted 1 June 2005).

²⁸ Van Vliet (1994) 191–195; Kranenburg (1946) 35.

²⁹ Schreiner (1933) 36 n. 1 and 2.

Fig. 4. Total (million guilders of 1600) and per buss (guilders of 1600) annual income from Holland's herring fisheries, 1600–1795.



Source: Figures 1–3; Database 'Value of the guilder' on the Historical prices and wages website (<http://www.iisg.nl/hpw/calculate.html>; consulted 1 June 2005).

fisheries. The total annual income from the herring fisheries collapsed, and although the fisheries recovered for a while the second Anglo-Dutch War (1665–1667) appears to have sealed its long-term decline.

The question is, of course, why the income per buss could not maintain the high level that seems to have been common around 1600. Simple supply and demand economics predicts that when supply goes down, prices will go up. This could (partially) compensate income for the declining volumes. The data from figures 1 and 2 show, however, that herring prices tended to be inelastic: they hardly reacted to changing supplies of landed herrings.³⁰ This raises the question why prices

³⁰ The following model was estimated: $\ln(\text{price}) = a + b \cdot \ln(\text{total catch}) + c \cdot \ln(\text{price}_{t-1}) + d \cdot \text{trend}$. Unless no new information has become available, people's perception of the price during the current period (t) will primarily be based on the price during the previous period ($t-1$). New information has been included in the form of the catch during the present year. Coefficient b represents the elasticity of the price of herring vis-à-vis the total amount of landed herrings: an increase of the catch by $\times\%$ would lead to a $(b \cdot \times)\%$ increase of the price. With prices compensated for inflation (1600 = 100)—we want to look at changes in herring prices and not changes of the general price level—testing resulted in the following relationship: $\ln(\text{price}) = 3,821 - 0,181 \cdot \ln(\text{total catch}) + 0,589 \cdot \ln(\text{price}_{t-1}) - 0,002 \cdot t$. R^2 is 0,51 and t -values of F and variables were all significant at the five percent level. This implies that only a rather small part of

were rather inflexible. The first observation that should be made is that producers were apparently a price-taker for the individual producer—or a collective of them—was unable to determine market prices. One important indicator is that there were so many vessels (see figure 1). Just as in commercial shipping, the herring fisheries spread costs—and thus also income—over shareholders that held parts in a fishing company. These companies could consist of multiple vessels, but many partnerships will also have been formed on an *ad hoc* basis and have covered only a single vessel.

Not much information is available on the concentration of ownership of parts, but taken the middle-class background of many investors into account, concentration cannot have been high. Fishing companies probably had many different constitutions so that it was difficult for a concentration to emerge that could determine prices. Besides, the foreign markets to which a large majority of the catch was exported could indeed absorb a significant share of the catch but they were not dependent on it. The many substitutes for Dutch herring—not only fish, but also other types of food—implied that the bargaining position of herring was not that strong that people were willing to pay any price. The price elasticity of supply, therefore, was by definition much smaller than for a product such as grain for which not many alternatives were available.

If declining catches could not be compensated for with higher prices, what caused average income to go down? One possibility is that an increase in the number of busses participating in the fisheries—or humans as explanatory variable—reduced the average catch, which might have led to higher market prices by increasing average production costs. The other possibility is that a declining catchability of the herring reduced the average catch per buss—an environmental explanation—and subsequently caused income per vessel to go down. In order to be able to further discuss this—as well as being able to construct the value added series—more information on the cost structure of the herring fisheries is necessary.

18 percent of the change in catch will be transferred to the price. As expected, the coefficient is negative. The sample included data for the period 1601–1780. As the herring fisheries did not take place in 1781 due to the fourth Anglo-Dutch War (1780–1784) no catch figures were available. As the elasticity model makes use of the natural logarithm a zero value could not be entered. Using alternatives to cope with this and extending the sample to 1795 yielded identical results.

Costs

As information on income on its own does not tell us very much, we need to focus on establishing the cost structure of Holland's early modern herring fisheries. Much has already been published on the fitting out of herring vessels. Van Gelder published the Van Adrichem accounts for 1575, 1592 and 1593 in full and for all accounts total costs were divided into different types of expenditure. Van Vliet studied fishing accounts and constructed benchmarks of expenditure for 1600 and 1630. This information can be used as a foothold for the starting point of our period.³¹ Unfortunately, nothing has been published to cover the period from 1630 to 1730. For the period around 1730 the unpublished accounts of the fishing company *De Groene Trompet* (*The Green Trumpet*), from Enkhuizen, which have survived for the period 1729–1733, can be used. Accounts for other fishing companies are available in the archives for the second half of the eighteenth century. To these can be added a document that Kranenburg used in his book and which probably dates from the mid-eighteenth century.³² Pons published evidence for the first half of the nineteenth century and his findings will serve as ending point for the present study.³³

The sources mentioned above will serve as benchmark estimates for the buildup of the cost structure. For the missing years interpolations will be made based on price series. This is a valid procedure, as regulations and practices in the herring fisheries barely changed during the two-century period under study. The fishing accounts make clear that we have to distinguish between variable and non-variable costs. The former depend on the size of the catch and the latter on the fitting out of a ship.³⁴ Let us start with the former.

The variable costs include salt to pickle the herring, barrels in which to store the herring, and taxes on landed herring levied by the local and provincial governments. We know that four barrels of salt were needed

³¹ Van Gelder (1911); Van Vliet (1994) 55–59, 140–143, 170–172.

³² WA, OAE, inv. no. 435 (bergnummer 1594); Kranenburg (1946) 199–201 refers to an undated eighteenth century 'memorie' that he had found in the Rotterdam City Archive. The National Archives in The Hague seem to hold an identical document. Kranenburg dated the document at 1755 and the data collected in the present study do not contradict this. See: NA, ACGV, inv. no. 99.

³³ Pons (1996) 193–214.

³⁴ The non-variable costs are based on making two voyages during the fishing season. This number of voyages was representative for most fishing companies.

to pickle one last of herring and that fourteen barrels were needed to store that last at sea. All of these costs depended directly on the total catch. Barrels were bought per last of fourteen pieces. Through the research of Van Gelder some prices for the last quarter of the sixteenth century are available. Based on extensive archival research Van Vliet assumes that the price for a last of barrels remained constant during the first half of the seventeenth century. For the eighteenth century the Enkhuizen fishing accounts again proved to be a valuable source as they yielded some twenty-five barrel prices.³⁵ Although the evidence is not very substantial, linear interpolations will be used to connect the data. Stave prices for the second half of the seventeenth century correspond with this.³⁶

A short note should be made on the rest value of barrels. It is well known that the salting of herring made the fish shrink. As mentioned above the herring shrunk so much that the barrels needed to be repacked on shore. From the fourteen barrels that comprised a last at sea only twelve remained ashore. In other words, out of every last two used barrels could be sold. The archival sources indicate that barrels that had been used or that had been at sea could still yield about two-thirds of their original value.³⁷ This would lead to a rest value of some tens of guilders. As the evidence is slim, this rest value will not be included in the analysis.

Another set of prices to be considered is the price of salt. The *College van de Grote Visserij* stipulated that the herring be pickled with high-quality Spanish salt. Only in times of deficits was it allowed to use salt of lower quality (i.e. French salt). Posthumus included price series for 'Iberian' salt from Cadiz and Setubal traded at the Amsterdam Bourse. Salt was traded there in hundreds of 404 measures, which, according to Van Vliet, corresponds to 101 barrels.³⁸ Next to the Bourse series, data are available for institutions in Utrecht, Leiden and Amsterdam.³⁹

When these series are compared, an almost identical development of prices is visible. These data will thus be used to construct a series of

³⁵ Van Gelder (1911); Van Vliet (1994) 55–60, 140–143, 170–173; WA, OAE, inv. nos. 435 (bergnummer 1594), 428 (bergnummer 1591 b).

³⁶ Schillemans (1947).

³⁷ WA, OAE, inv. nos. 435 (bergnummer 1594), 428 (bergnummer 1591 b).

³⁸ Van Vliet (1994) 170 n. 83.

³⁹ Posthumus (1934–1964).

Holland salt prices. The Setubal series was used as lead series because it had more data entries (119) than Cadiz (100).

Information on the purchase of salt can be found in the Enkhuizen fishing accounts of the second half of the eighteenth century. On 27 April 1780, the fishing company *Arion en de Pekelharing* sold 62 barrels of salt in Amsterdam. Our price series suggests that they should have received fl. 4.64, but in reality they received only fl. 2.46. This, however, was an exceptional difference. On average the Enkhuizen fishing companies bought their salt about twenty-one percent cheaper than our salt price series would suggest. The difference might be explained by the fact that the Setubal price series was the more expensive of the two series available for the Amsterdam Bourse. In our model we will compensate for this.

The herring fisheries were also affected by local and provincial taxes. Already from the mid-fifteenth century onwards taxes were levied on landed herring.⁴⁰ The most important tax was the so-called *lastgeld*, which was levied in all of Holland by the *College van de Grote Visserij*. Next to this provincial tax there were local taxes known as the *kaygeld* (Vlaardingen and Delfshaven) and the *havengeld* (Maassluis).⁴¹ Here, I will not take these local taxes into account for two reasons. First, there is no all-encompassing study of these local taxes for the entire period. They were levied both per voyage and per last, which makes it a bit difficult to treat them as variable costs. Second, local taxes were significantly lower than the *lastgelden*. Contrary to the different local taxes, all towns were subject to the *lastgeld*. From the accounts and minutes of the *College van de Grote Visserij*, we can reconstruct a continuous tax series for the period 1600–1795.⁴²

Contrary to the variable costs, the non-variable costs are not influenced by the size of the catch, but by the decision to participate in the herring fisheries. These costs thus depend on the number of busses that participated, the depreciation of the herring buss during its lifespan, the number of nets used, money spent on wages and victuals for the crew, interest on purchases as well as some remaining costs. Obviously, the first thing a fishing company had to worry about was the fishing vessel.

⁴⁰ Bijl (1951) 145–146; Sicking (2004) 40, 164.

⁴¹ Van Bochove (2004) 5–7.

⁴² NA, ACGV, inv. nos. 6, 10, 17–22, 27–28, 162–193, 204, 206–210, 216–217; Gemeente Archief Rotterdam (GAR), Oud archief van de stad Rotterdam 1340–1813 a 1–b (OSR), inv. nos. 2244–2246.

The buss could be bought new or second-hand. Value added figures, however, do not include the purchasing price, but the annual depreciation. In order to determine the depreciation, the purchasing price as well as the life expectancy of the vessel has to be known. The literature informs us that the life expectancy of a fishing vessel was generally put at twenty years.⁴³

Some purchasing prices are also available. Van Vliet, for example, combined the transactions that he found during his own archival research with the Van Adrichem accounts. This resulted in an average price of 2,906 guilders around the year 1600, 4,000 guilders during the Twelve Years' Truce (1609–1621) and 3,877 guilders around 1630.⁴⁴ According to Kranenburg the hull of a buss cost 2,650 guilders in 1609 and in 1755 one had to pay 4,500 guilders for a new buss.⁴⁵ In the work of the seventeenth century Dutch writers Semeyns (1639) and De la Court (1669) a buss cost 3,150 and 4,550 guilders respectively. The eighteenth century journal *De Koopman* (1768) mentioned an amount of 9,000 guilders, but this must have been heavily exaggerated as in the same year the Haak brothers from Enkhuizen purchased the hull of a new buss for 3,409 guilders.⁴⁶ A fully refurbished vessel naturally costs more. Wätjen published information on the *Margareta* (1770), which cost 4,946 guilders for hull and rigging, and the *Scheepsbouwerij* (1774) that cost 5,930 guilders for hull, rigging and *vleet*. As one paid nine guilders per fourth part of a net (*verrendeel*) at this time, one will have paid 4,580 guilders for the hull and rigging.⁴⁷ In 1780 a hull could be purchased for 5,000 guilders and in 1784 one paid 6,043 guilders for hull and masts.⁴⁸

Prices for second-hand busses are also available, but too often the age of the buss is unknown. These prices can, however, be used to approximate the price of a new buss. We then need to look at exceptionally high prices. In 1646, for example, a two-year-old buss was sold together with some fishing gear for 3,150 guilders. In 1801, when the *Emder Heringfischerei-Kompanie* was liquidated, one of the busses still

⁴³ Unger (1978b) 11; Kranenburg (1946) 200–201; Boelmans Kranenburg (1981) 216. Compare for annual depreciation in the sixteenth century Sicking (2003).

⁴⁴ Van Vliet (1994) 56, 170.

⁴⁵ Kranenburg (1946) 200.

⁴⁶ Beaujon (1885) 66–67; WA, OAE, inv. no. 435 (bergnummer 1594).

⁴⁷ Wätjen (1910) 180; WA, OAE, inv. no. 435 (bergnummer 1594).

⁴⁸ WA, OAE, inv. no. 435 (bergnummer 1594).

commanded a price of 5,700 guilders.⁴⁹ One other example from 1746 provides an estimated value of 4,350 guilders for a used buss.⁵⁰

It is clear that the final price did not include the same parts of the buss in every transaction. The above compensated for this by excluding nets from the final price. Although rigging and masts seem to have added some costs, the main difference will have been caused by the changing price of timber. Due to a lack of good price series for timber it is difficult to be specific about the development of buss prices over time. When we interpolate the available data, the resulting pattern seems to be consistent with the general movement of timber prices.⁵¹ The data suggest that the price of a new buss increased from around 3,000 guilders at the beginning of the seventeenth century to somewhere around 6,000 guilders at the end of the eighteenth century. The three prices for second-hand busses noted earlier seem to be in line with the price for new herring vessels.

The present study could only retrieve evidence on the actual depreciation of herring busses for a single case. The fishing company *The Green Trumpet* bought its buss, along with some equipment, for 1,976 guilders in 1729. After four seasons of fishing, the vessel was again sold for 1,450 guilders, suggesting an annual depreciation of c. 130 guilders.⁵² Obviously, the value of a buss could increase as fishing companies also invested in maintenance and repairs, but here these costs are included in the remainder. Assuming that all fishing companies invested in maintenance and repairs evenly, comparing purchasing and selling prices can indeed establish the depreciation. Of course, depreciation will also have been greater during the first years than during later years.

Another element that should be taken into account is that a buss, when it could no longer be used as a fishing vessel, still represented a small rest value. In 1784 a fishing company sold the hull and mast of its buss for 309 guilders. This probably means that the buss must have been really old. Assuming that this was the sale of a twenty-year old buss at the end of its lifetime, this would represent about eight percent of the purchasing value in 1764. Using this information for *The Green Trumpet* would on average give c. 210 guilders depreciation per annum. We saw that the actual value was smaller (c. 130 guilders), but looking

⁴⁹ Kranenburg (1946) 200–201.

⁵⁰ WA, OAE, inv. no. 435 (bergnummer 1594).

⁵¹ Posthumus (1934–1964); Schillemans (1947); Middelhoven (1978); Tveite (1961).

⁵² WA, OAE, inv. no. 435 (bergnummer 1594).

at the purchasing price the buss was not new either. Based on the evidence collected above, the annual depreciation will be calculated as one twentieth of the value of a buss after it has been compensated for a rest value of 8 percent.⁵³

Once a ship was arranged for, one had to worry about nets. These were made of hemp and it seems that they were often produced at home. In Schiedam, however, nets were also made in factories owned by the town. Although some evidence of male labour is available, production and repair often involved the labour of women and girls, who were often the wives and daughters of the fishermen.⁵⁴ Often it was stipulated that one of the shareholders would supply the fishing company with nets. The fishing company *The Green Trumpet* was supplied by the Haak brothers and Jan Minne. Around 1730 this involved the substantial sum of about 1,100 guilders per annum.⁵⁵ The extra profit that could be made on such transactions will definitely have made investment in the herring fisheries more interesting to some investors.

From the end of the sixteenth century the *vleet*—the combination of all nets together—consisted of forty-five nets, which were each made up of four so-called fourth parts (*verrendeels*). This means that in total 180 *verrendeels* were required per boat. A mid-eighteenth century source, however, informs us that mostly 150 of them were used.⁵⁶ The accounts of the Enkhuizen fishing company *The Green Trumpet* confirm that a reduction in the number of *verrendeels* could already be observed during the period 1729–1733. During this period about 36 nets or 144 *verrendeels* were used annually.⁵⁷

After having been in the seawater for weeks the nets needed some repairs. First they were washed and then stewed in tan. The latter was a disinfectant and antiseptic that was added to the water during cleaning to protect the nets from the harmful influences of the seawater. It also made the nets more flexible. Next, the nets were brought to fields and hung out in order to dry and be mended. In 1575 mending paid about one stuiver per net. Around 1730 the common rate was four stuivers,

⁵³ Due to a lack of highly detailed evidence, one cannot correct for the build-up of the fleet in 'year-classes' of busses.

⁵⁴ Van Gelder (1911) 8, 26–27, 41; Kranenburg (1946) 18–19; Boelmans Kranenburg (1979) 134; De Wit (1999) 642, 646; De Wit (2005) 72–73; WA, OAE, inv. no. 435 (bergnummer 1594).

⁵⁵ WA, OAE, inv. no. 435 (bergnummer 1594).

⁵⁶ Van Gelder (1911) 8; Kranenburg (1946) 199–202; NA, ACGV, inv. no. 99.

⁵⁷ WA, OAE, inv. no. 435 (bergnummer 1594).

but sometimes three stuivers were paid. When the season ended the nets needed to be stored. In 1575, for example, the fishing company in which Van Adrichem participated stored them at a Rotterdam orphanage.⁵⁸

Although the nets could be repaired after each voyage, they only lasted for one single fishing season. This meant that every year a quite substantial investment in nets had to be made. Both the late sixteenth-century accounts and the early eighteenth-century accounts show that the fishing companies coped with this by spreading the costs of this purchase over the year by buying at two moments: just before the first and second voyages of the season.⁵⁹ The nets bought before the first voyage (on average 92 nets or 64 percent) were written off by the end of the season while the nets bought for the second voyage (on average 52 nets or 36 percent) could still be used during the first voyage of the next season. This would also explain why during winter nets needed to be stored away. These nets would thus still account for some value.

During an auction of ships and fishing goods on 23 April 1746 two *vloten* of fifty nets were sold. They had been used during the latest fishing season and were sold for fl. 325 and fl. 300.⁶⁰ As 50 quarters of a net (*verrendeel*) should represent about seventeen percent of the total *vleet* value, this amount is somewhat higher—although still of the same magnitude—than the average quarter price of about nine guilders around that time would suggest.⁶¹ This rest value would of course only pay out when the fishing company would be liquidated. Depending on the lifespan of the fishing company this could thus result in an annual rest value of some tens of guilders. Here I will ignore this amount.

Fishing nets absorbed about twenty percent of the total annual budget. When reconstructing cost patterns we thus need to know more about

⁵⁸ Van Gelder (1911) 9, 15, 24, 27, 33, 40–41; WA, OAE, inv. no. 435 (bergnummer 1594).

⁵⁹ Van Gelder (1911) 8, 24–26, 38, 42–43. The first purchases of the season were made by *The Green Trumpet* on 11 July 1729 (93½), 8 July 1730 (97), 21 June 1731 (100) and 26 July 1732 (76). The second purchases were made on 23 September 1729 (58½), 5 October 1730 (50), 29 September 1731 (50) and 25 September 1732 (50). See: WA, OAE, inv. no. 435 (bergnummer 1594).

⁶⁰ It is fairly safe to assume that this concerns 50 *verrendelen* instead of 50 nets. The latter would imply that the entire *vleet* consisted of 200 *verrendelen*, which would not correspond to existing knowledge on net usage at all. The assumption also corresponds with the purchasing pattern of *The Green Trumpet*. See: WA, OAE, inv. no. 428 (bergnummer 1591 b).

⁶¹ Using an average annual *vleet* size of 144 *verrendeels* (see above on *The Green Trumpet*) the 50 *verrendeels* would after one voyage represent approximately $\frac{1}{2} \times 50 / 144 \approx 17$ percent of the annual *vleet* costs.

net prices. The only quarter prices we now have come from the late sixteenth-century fishing company of Van Adrichem and the eighteenth century Enkhuizen account books. For the period 1575–1800 prices are available for only 27 years, most of them dating from the second half of the eighteenth century.⁶² Obviously, this is not enough to construct a price series. We do, however, possess prices of the raw material that was used to make the nets: hemp. With a correlation coefficient of 0.58, the relationship between hemp prices as quoted on the Amsterdam Bourse and the net prices found in fishing accounts is significant. In order to use Dutch hemp to estimate net prices some gaps needed to be filled. English hemp prices were consulted to fill these gaps.⁶³ As the exchange rate between guilder and pound was more or less stable over time, the correlation coefficient of 0.82 between the hemp series suggests that this approach yields valid results.⁶⁴ Price ratios were calculated in order to fill the gaps in the Dutch data and to construct the final price series. When the results are compared to the evidence for the period around 1600, the procedure seems to yield plausible results.

Next to the investment in buss and nets, a lot of money was also needed to pay the fishermen. Figure 5 shows that at the end of the sixteenth century fishermen's wages increased somewhat faster than those of unskilled labourers. Presumably this had to do with the rapid expansion of the herring fisheries during this period. Evidence for the first half of the seventeenth century suggests that wages remained constant. In other sectors this stabilisation of the wage rate only took place considerably later. This can probably be explained by the fact that catches in the herring fisheries reached their highpoint around 1600 and that wages had grown faster than the general level.⁶⁵

The accounts of the fishing company *The Green Trumpet* allow us to determine what a crew earned per fishing season of two voyages around 1730. Next to this cash wage fishermen often received part of

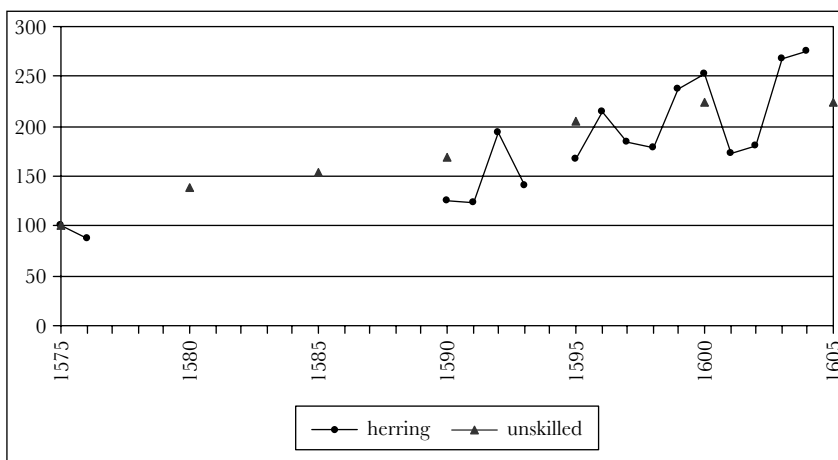
⁶² Van Gelder (1911); WA, OAE, inv. nos. 435 (bergnummer 1594), 428 (bergnummer 1591 b).

⁶³ Van Gelder (1911) 8; Kranenburg (1946) 18–19; Boelmans Kranenburg (1979) 134; De Wit (1999) 642; Posthumus (1934–1964) Table 129; Beveridge (1965) 635–637, 670, 676, 680.

⁶⁴ The exchange rate was almost constant at about 10.5 guilders to 1 pound. Coefficients of variation (the standard deviation expressed as percentage of the mean) were relatively small at about 3 to 4 percent. See: Schneider, Schwarzer and Denzel (1994) 49–54; Schneider, Schwarzer, Zellfelder and Denzel (1992) 71–78.

⁶⁵ Van Gelder (1911); De Vries and Van der Woude (1997) 610; Van Vliet (1994) 57, 142, 162, 170–171.

Fig. 5. Wages paid to herring fishers and unskilled labourers, 1575–1605 (index: 1575 = 100).



Source: Van Gelder (1911); De Vries and Van der Woude (1997) 610.

Note: When the accounts indicated that the fishermen had a share in the catch, the amount of money was included. The figures are corrected for differences in the number of voyages per fishing company.

their wage in herring. Whereas the Van Adrichem accounts make clear that at the end of the sixteenth century the crew received some 150 guilders worth of herrings, the Enkhuizen accounts do not explicitly mention this amount. This, however, does not have to mean that the crew did not receive any herrings; their share can just as well have been deducted from the total catch without further notice. Van Vliet's figures do in fact include a share in the catch. When we would add an amount of 150 guilders to the 1730 wages we would approximately get the wage level of the first half of the seventeenth century. This would suggest a further stabilisation of the wage level during the second half of the seventeenth century, which corresponds to the tendency of nominal wages not to be reduced.⁶⁶

Wage costs increased rapidly during the last quarter of the sixteenth century from about 500 to 1,400 guilders, and stayed at this level during the seventeenth century. Only in the eighteenth century can one observe a modest increase in wages. In 1830 wages had risen to 1,614

⁶⁶ Van Vliet (1994) 57, 142, 162, 170–171; Van Gelder (1911); WA, OAE, inv. no. 428 (bergnummer 1591 b).

guilders.⁶⁷ Compared to 1730 this would indicate an increase of about fifteen percent. This is in keeping with Kranenburg's observation that wages must have risen during the eighteenth century due to a scarcity of fishermen.⁶⁸ In 1795 perhaps between 1,550 and 1,600 guilders were paid.

During the voyage the fishing company provided the crew with food.⁶⁹ The detailed accounts of *The Green Trumpet* show that the crew took on board products such as bread, biscuit, beer, brandy, candles and peat. Again, the task of providing at least a substantial part of these goods was divided among the shareholders. Beer was bought from Andries Haak (c. 90 guilders annually) while the Haak brothers and Jan Minne sold 'victuals', rye and peat (c. 190 guilders annually).

The same sources also shed some light on the associated costs. It becomes clear that from 1575 onwards fishing companies had to spend ever more money on feeding the crew. According to Van Vliet and Kranenburg expenditure stabilised during the first half of the seventeenth century at about 650 guilders per buss per year. The latter even believed that this was the case until the mid-eighteenth century. His source (676 guilders), however, assumed that three voyages were made during the fishing season. When only two voyages were made one gets 451 guilders, which is somewhat more than the 420 guilders that the Enkhuizen fishing company annually spent on food during the period 1729–1733. It is much less than the amount of 768 guilders that Pons found for 1830.⁷⁰ In the form of bread, biscuit and beer, grain made up about fifty percent of the fishing company's total expenditure on food. The changes in food costs seem to have been associated with the change in grain prices, as figure 6 illustrates. The years between the established benchmarks will be interpolated by using the movement of rye prices.

At the beginning of the season the fishing companies had to make a large investment in order to buy such things as nets, barrels, salt and food. Studies have shown that the companies coped with this by buying on interest and repaying after the catch had been sold.⁷¹ The account

⁶⁷ Pons (1996) 197–198.

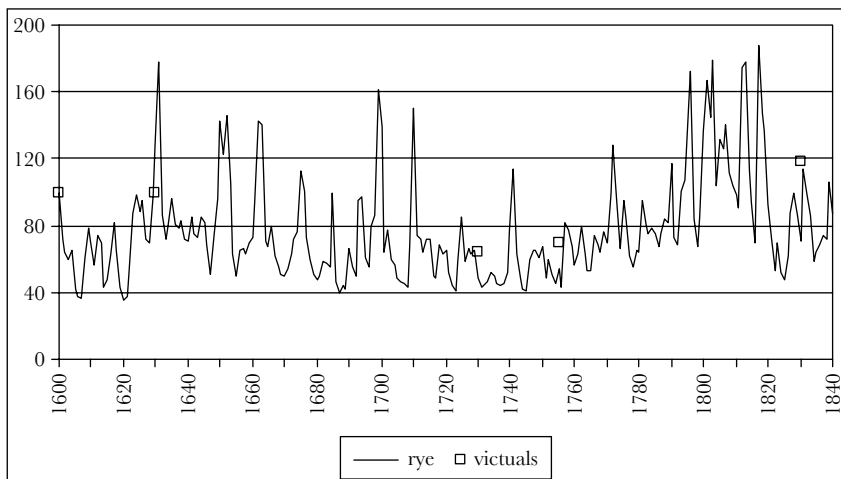
⁶⁸ Kranenburg (1946) 203.

⁶⁹ Kranenburg (1946) 105–108. The fishermen might have added to their diet some freshly caught herring.

⁷⁰ Van Vliet (1994) 56–57, 142, 170–171; Kranenburg (1946) 202–203; Van Gelder (1911); Pons (1996) 197–198; NA, ACGV, inv. no. 99.

⁷¹ Van Gelder (1911) 4; Kranenburg (1946) 214; Van Vliet (2002) 136.

Fig. 6. Rye prices and expenditure on victuals, 1600–1840 (index: 1600 = 100).



Source: Verrijn Stuart (1903) 19–28. For victuals, see text.

Note: For simplicity's sake use was made of Arnhem rye prices. For the present purpose this does not influence the results as it has been well established that Arnhem and Amsterdam prices moved closely together.

books of *The Green Trumpet* show that over 28.5 percent of the annual costs were paid on interest. The supplier (again the Haak brothers and Jan Minne) was paid two percent interest. The interest rate reflected the rate that was common in Holland at the time. During the 1720s and 1730s the sight interest rate (0–six months) averaged between 8.4 and 8.5 percent.⁷² As the credit was given for the duration of the voyage, the half-year period could fit about four voyages and 1.02^4 equals 8.2 percent interest. Probably fishing companies in other towns and periods financed their business in similar ways. The data published by Dehing and 't Hart will be used to reconstruct the interest rates. As data for the period 1790–1795 are lacking, the interest rate of the preceding period was used.

Finally, ropes and sails formed the most important part of the remaining costs. Ship, sails, ropes and nets all suffered from the elements while at sea and needed repairing back home. Other costs included medicine for the captain, peat and firewood, ointment and gifts to the poor.⁷³

⁷² Dehing and 't Hart (1997) 53.

⁷³ Van Gelder (1911); WA, OAE, inv. no. 435 (bergnummer 1594).

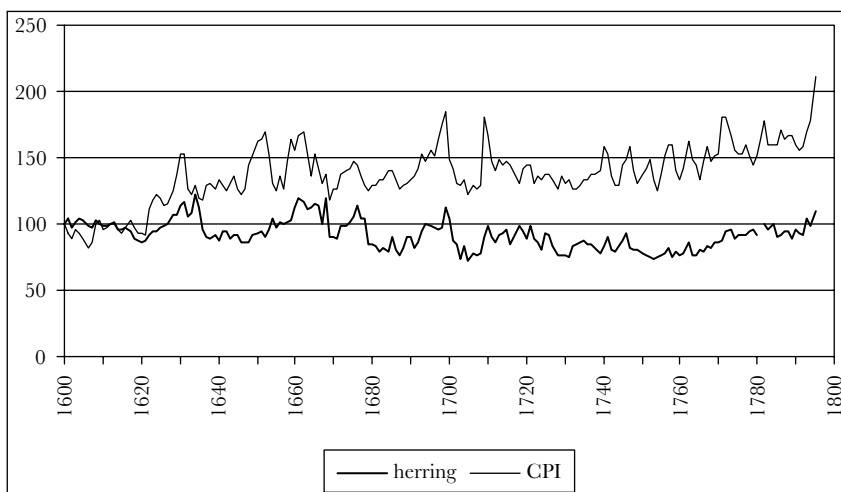
The Van Adrichem accounts for 1592 and 1593 show that the average catch and remaining costs in these years were about 66 lasts and 1,385 guilders respectively. The latter amount matches closely the average of 1,407 guilders for the entire period, 1590 to 1604. It should be noted, however, that the *lastgeld* is included in these figures. As the present analysis includes the *lastgeld* as a variable cost, it has to be deducted here. The *lastgeld* amounted to 1½ guilder per last, which leaves 1,286 guilders.⁷⁴ For the same reason the amount of 1,315 guilders used by Van Vliet should be reduced to approximately 1,150 guilders. The fishing company *The Green Trumpet* spent 910 guilders annually and Pons reconstructed an amount of 1,052 guilders for 1830.⁷⁵ As Pons' figure does not include peat, I will instead use 1,100 guilders as the account book of *The Green Trumpet* indicates that about five percent of the remaining costs was spent on peat. Around 1600 a fishing company spent some 1,200 guilders annually on goods and services that were not further specified in the cost model. Between 1600 to 1630 and 1730 this amount declined somewhat and between 1730 and 1830 it increased again. I will use linear interpolations to connect the years.

During most of the seventeenth century the variable costs ranged between 1,000 and 1,500 guilders per year. From about 1680 onwards the annual costs were lower and often ranged between 500 and 1,000 guilders. The share of salt in the annual expenditure declined slowly over time from about 60 percent at the beginning of our period to 40–45 percent at around 1795. Barrels initially made up 30–35 percent of the variable costs, but this increased to about 45 percent. During most of our period the non-variable costs ranged between 4,000 and 5,000 guilders. There was a tendency to decline, but from the mid-eighteenth century onwards there was a sharp increase in non-variable costs. As could be expected, labour (wages and victuals) and fishing nets consumed the bulk (c. 75 percent) of the budget. Interest made up only a small portion of the annual expenditure.

⁷⁴ Van Gelder (1911) 40–41, 47, 51, section IV. The 1575–1576 accounts are not used because there is a large gap until the next account becomes available and because they are chronologically too distant from the period for which the value added will be calculated. In this I follow Van Vliet (1994) 57. The *lastgeld* level seems to have been representative for the period. In 1581, 1582, 1592 and 1593 the *lastgeld* was 1½ guilder per last herrings and in 1599 two guilders were levied. See: Van Gelder (1911) 40, 47; NA, ACGV, inv. nos. 17, 28.

⁷⁵ Pons (1996) 198; Van Vliet (1994) 171.

Fig. 7. Price indices for fitting out a herring buss (total costs) and buying a basket of consumables (CPI), 1600–1795 (index: 1600 = 100).

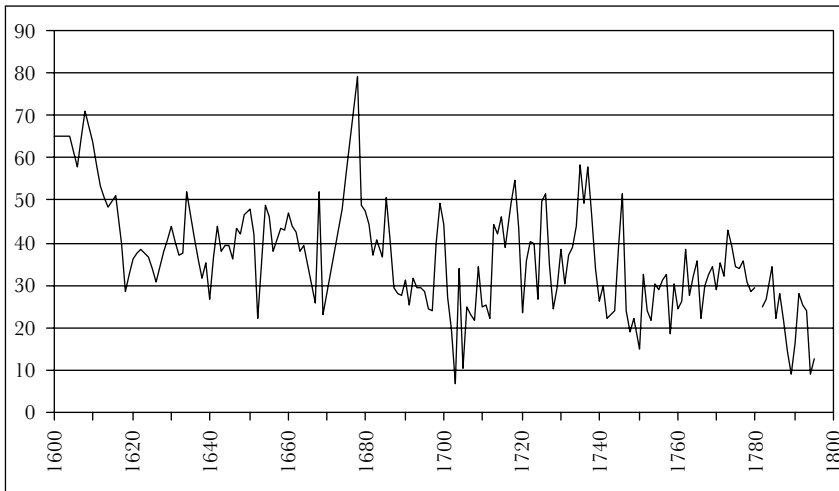


Source: Database 'Value of the guilder' on the Historical prices and wages website (<http://www.iisg.nl/hpw/calculate.html>; consulted 1 June 2005); section on costs.

Did costs, as has often been suggested, increase so fast that the profit margin was evaporated? It is difficult to devise a clear yardstick to measure the development of costs, but the development of the general price level as expressed in the consumer price index (CPI) offers a possibility.⁷⁶ Figure 7 makes clear that the average costs to employ a buss did not increase as much as did the general price level. It thus seems hard to maintain that exceptionally high costs were the main cause of the decline of the Dutch herring fisheries.

As we now know how costs developed, it is time to come back to the point made at the end of the last section. It was suggested that the participation of too many busses could decrease the average catch / income per buss while the costs of fitting out a buss remained the same. This section has shown that a large part of the costs associated with participation in the herring fisheries were in fact non-variable costs. These remained more or less constant over time, so that a reduced average catch indeed increased total production costs. This might subsequently have led to

⁷⁶ The CPI that was used can be found in the database 'Value of the guilder' on the Historical prices and wages website (<http://www.iisg.nl/hpw/calculate.html>; consulted 1 June 2005).

Fig. 8. Average annual catch, 1600–1795 (*last per buss*).

Source: Van Bochove (2004) and overview section.

higher market prices. The relationship between the number of busses and the average catch should then be both significant and negative. Such a relationship, however, could not be found within the data.⁷⁷ In explaining the decrease of the average catch, the environment—or its reaction to human interference through fishing—would be our main bet to explain the declining average income (see figure 8). With costs remaining the same and income going down, profits must have been under pressure. The following section will document this phenomenon and the way in which investors coped with it.

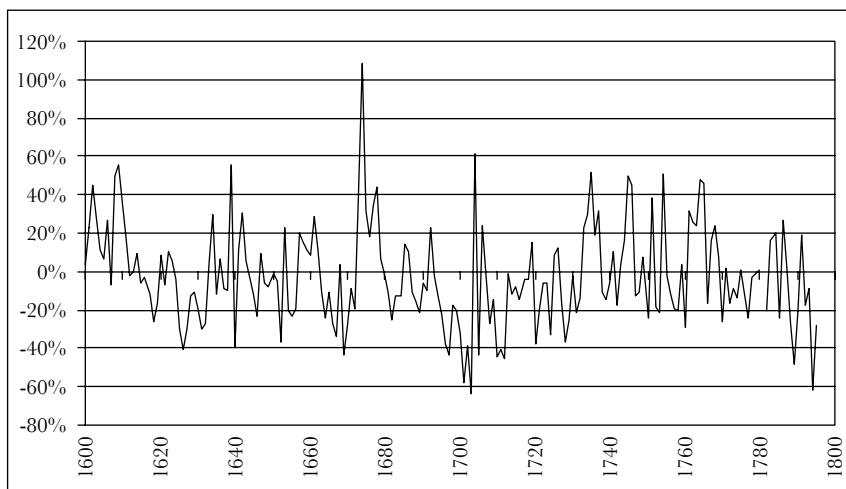
Economic variables

Profits in the herring fisheries were highly unstable and often negative. The same phenomenon can be observed in the nineteenth-century herring fisheries and the early modern whaling industry.⁷⁸ A common explanation is that for the people who invested in the herring fisheries, the fisheries itself did not form their only source of income. They also

⁷⁷ Different periods were studied and distinction was also made between the provincial and local (i.e. Schiedam) level.

⁷⁸ Pons (1996) 212–213; Van Bochove and Van Zanden (2006).

Fig. 9. Annual profits in the Dutch herring fisheries, 1600–1795 (percentages).



Source: sections on income and costs.

supplied the fishing companies with goods (e.g. food or barrels) and sold the herring abroad where the herring prices were much higher. The fisheries were also a kind of lottery: investors hoped to gain from the highly volatile movement of profits by investing at the right moment.

Trading in herring offered good opportunities to earn money. The Baltic was one of the most important markets for Dutch herrings. The Sound Toll registers testify to the enormous amounts of herring that were shipped eastwards. During the first half of the seventeenth century the Dutch shipped about 8,000 lasts, or 31 percent of their catch, to the Baltic every year.⁷⁹ Salted North Sea herrings commanded a good price in the Baltic. Stockholm prices, for instance, show the superior price of salted North Sea herrings (*sill*) over Baltic herrings (*strömming*).⁸⁰ Between Danzig, the main purchaser of Dutch herrings, and Amsterdam an interesting price differential existed.⁸¹ The export of herring was usually combined with the import of grain. As many ships went into the Baltic in ballast, freight costs were usually charged only on shipping grain back to the west. When one compensates for this and also includes some customs, the profit that could be made on shipping

⁷⁹ Bang and Korst (1906–1953).

⁸⁰ Jansson, Palm and Söderberg (1991) 41–44, 51–53, 55, 66–69, 84–85.

⁸¹ Posthumus (1934–1964); Pelc (1937); Furtak (1935).

mities between Amsterdam and Danzig during the 1630s and 1640s could be as high as 27 percent.⁸²

With narrowing profit margins, there were two options open to investors in the herring fisheries: invest in other sectors of the economy or invest in all levels of the herring industry.⁸³ During a period when the overall economy was booming, investors will not have had any problems in finding alternative investment opportunities. The second option—vertical integration of the herring industry—will have been more difficult for the ordinary investor without a network of contacts and / or experience in manufacturing and trade.

Van Vliet documented exactly these two processes at the turn of the seventeenth century. The wealthy merchants considered other investment opportunities to be more profitable than the herring fisheries and thus transferred their funds to merchant shipping, the East India Company, the West India Company, land development and manufacturing industries. Smaller investors—many of them with ties to the herring fisheries—replaced them. These investors were involved in multiple parts of the 'herring column'. By combining several parts of the column they could compensate possible losses in the fisheries itself. This, however, must have complicated investing in the herring fisheries and could more easily be achieved by those who were active in the sectors that supplied the herring fisheries or traded the produce abroad.⁸⁴

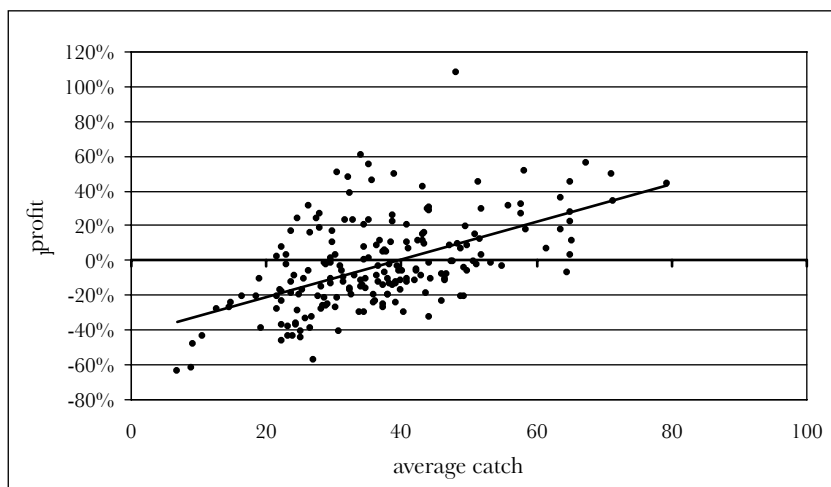
It is now clear what happened and how investors reacted to it. What is still unknown is why profits were unstable and even became negative. We saw that costs per buss could not be blamed: compared to the CPI price changes were not drastic at all. Income seemed to offer a better answer. As prices were rather inelastic, catches surely must have played a role. Figure 10 illustrates this point. The correlation coefficient between the two series is 0.28. A seasonal catch of approximately 40 lasts was the breakeven point in the struggle to make a profit. This sizeable catch was needed as the fishing companies had to compensate for their considerable non-variable costs, which made up c. 83 percent of the total costs.

⁸² Unger (1980) 266, 270; Van Tielhof (2002) 182–219, 340–346. Published shipping contracts also show this frequent combination of the trade in herring and grain. See: Winkelman (1971–1983).

⁸³ Van Vliet (2002).

⁸⁴ Van Vliet (2002) 138, 145.

Fig. 10. Profit and average catch per vessel, 1600–1795 (percentages and *last*).



Source: section on profits; Figures 1 and 8.

A close link between profits and catches thus existed, but what exactly was the position of the fishing companies in this? When, at the beginning of the new season, potential investors had to make their decision whether or not to participate in the upcoming herring fisheries, only information relating to last year's fisheries was available. As entrepreneurs they will not have been so much interested in the size of the catch, but more in the profits that could be gained. The profits of the previous year's fisheries will thus have played an important role in their considerations. Moreover, capital was also required to fit out the new fleet. A profitable season will thus have been an incentive to also invest in the next; losses, however, will have reduced the enthusiasm and capital to invest. Once the entrepreneurs had decided to participate, the results of the first voyage will have been important in determining whether they would also sail out on a second voyage. This makes sense as non-variable costs consumed the bulk of the budget and when the results of the first voyage were disappointing investors will have decided to cut their losses.⁸⁵ It is also consistent with evidence found by Poulsen in the Schiedam

⁸⁵ Van Bochove (2004) 17.

archives. He found that most skippers who participated in the second round of voyages had also sailed out during the first round of voyages. Not many new skippers entered the fisheries during the season.⁸⁶

Using regression analysis one can learn whether the above was indeed the case. It should be noted, however, that the present analysis was unable to compensate for not sailing out on a second voyage. Costs (and losses) in bad fishing years are thus estimated somewhat too high. Modelling profits econometrically showed that when both the current catch per buss and the historical catch per buss ($t-1$) were included, these were highly correlated. This, of course, has to do with the fact that the current catch is partly based on the historical catch—because of the relationship through profits—and because of the loss minimising practices after the first voyage. Next, the catch was modelled econometrically. The historical catch ($t-1$) was not included as it is only a proxy for profit. The test showed that both the current and historical profit ($t-1$) had to be included as the current catch was influenced both by historical results and the result of the first voyage during the present season. Both coefficients are significant and positive: good profits are of course an excellent incentive to make fishermen catch more fish.⁸⁷

Reviewing the above, it becomes clear that investors leaned heavily on the results of the preceding season in determining whether or not to invest in the current season. If results were disappointing after the first voyage, they ceased their effort in order to avoid further losses. As costs did not increase and as prices were inelastic, changes in income—and thus to a large extent profit as well—must have been caused by changes in the size of the catch. The test indeed indicated a close relationship between average catches and profits. With practice in the herring fisheries remaining the same during much of the early modern period, the question is then why the average catch declined and why it was so volatile. During the period in question the average catch was 37.0 lasts with a standard deviation of 13.0 lasts. The coefficient of variation is as large as 35 percent. It will be the task of (maritime) historians and biologists to explain these large changes in the catchability of the herring.

The elements that are needed to calculate value added for the herring fisheries have all been reviewed individually in the above. This

⁸⁶ Poulsen (2008). See also chapter thirteen in this volume.

⁸⁷ The relationship can be expressed as: $\text{catch} = 48,21 + 22,11 \cdot \text{profit}_t + 7,63 \cdot \text{profit}_{t-1} - 0,10 \cdot t$. Modelling was performed on the period 1601–1780. R^2 is 0,51 and t -values of F and variables were all significant at the five percent level.

contribution will calculate the gross value added at market prices. This figure includes taxes, depreciation of the herring buss, wages and victuals paid to the crew, interest and profits. Received subsidies, however, have to be subtracted. The average productivity was 133 guilders (of 1600), but the average productivity could fluctuate to a large extent. Compared to whaling and agriculture, 133 guilders was not much.⁸⁸

It is clear that the absolute contribution of the herring fisheries to the Dutch economy declined during the seventeenth century. The industry could still recover from the decline during the first quarter of the seventeenth century, but from around 1640 a continuous process of decline set in until an absolute low was reached around 1700. Due to large losses, value added was even negative for a number of years. The first half of the eighteenth century then witnessed some recovery until the herring fisheries went into their final decline from the 1750s onwards.

Although more research needs to be done on the sixteenth century, figure 11 shows that the development of the herring fisheries is consistent with the decline of the absolute value added figures of the overall fisheries as indicated by the benchmarks. Adding value added of the whale fisheries would bring the late eighteenth-century figures close to the 1807 figure for the overall fisheries.⁸⁹ The gap could probably be filled with the cod and coastal fisheries. As the cod fisheries and whaling industry were only started in Holland in the seventeenth century, reconstructing the development of the sixteenth-century herring fisheries becomes even more important.

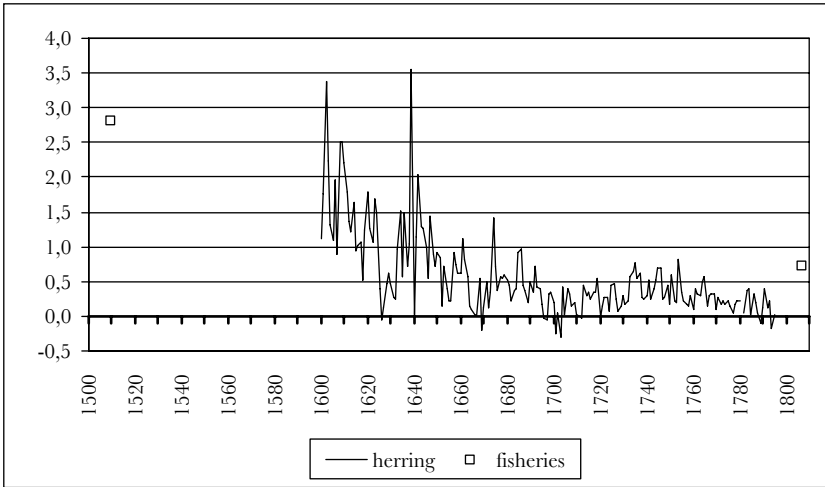
Conclusion

At the beginning of the sixteenth century, the fisheries were a very important part of Holland's economy: 8.9 percent of GDP was generated in this sector. Some three hundred years later the industry was a much less significant part of the economy: it was only responsible for a mere 0.3 percent of GDP in the Netherlands. Holland's glory was no more. Until recently, it had not been possible to track this important change during the three centuries in between. The present study tries to shed some light on the seventeenth and eighteenth centuries. As

⁸⁸ Van Bochove and Van Zanden (2006).

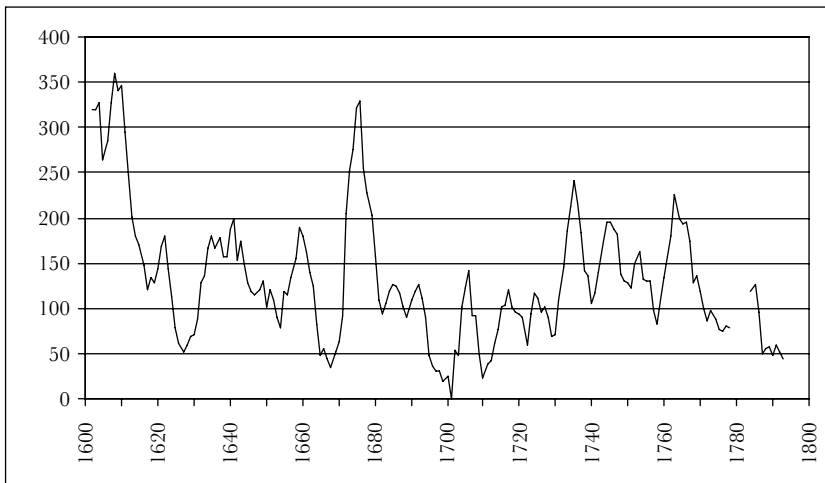
⁸⁹ Van Bochove and Van Zanden (2006).

Fig. 11. Gross value added at market prices of Holland's (herring) fisheries, 1500–1810 (million guilders of 1600).



Source: sections on income, costs and profit; Database 'Value of the guilder' on the Historical prices and wages website (<http://www.iisg.nl/hpw/calculate.html>; consulted 1 June 2005); Van Zanden (2002) 148; Smits, Horlings and Van Zanden (2002) 127, 219.

Fig. 12. Gross value added at market prices per capita, 1600–1795 (guilders of 1600; centered five-yearly moving average).



Source: Figure 11 and text.

practice in the herring fisheries has been well documented—not much changed during the two centuries under review—a model could be constructed that brings together data on income and expenditure. Price series for all variables were constructed in order to determine annual profits and value added. It would be preferable to make use of actual prices of fishing goods and a task for future research would thus be to gather more evidence to verify the results. Perhaps we could make the model even more accurate and include forms of income that have been neglected or correct for not sailing out on a second voyage. Possibly the sixteenth century ‘gap’ could also be filled. The strength of the model is that such new evidence can easily be integrated. Possibly, the model can—in an adjusted form—also be applied to other historical fisheries. This has already been done in case of the Dutch whale fisheries, but the Newfoundland and Iceland cod fisheries as well as the Iberian tuna fisheries would also be interesting cases.⁹⁰

It became clear that the herring fisheries were in heavy weather during the first quarter of the seventeenth century. A period of recovery could not be sustained and from the late 1640s onwards total catches were in full decline until the end of the eighteenth century. Profitability and value added per capita fluctuated, but were reasonable until the 1660s and 1670s. The period of decline that then set in lasted until the early eighteenth century, when figures improved until the 1750s and 1760s. During the last decades of the eighteenth century, however, profits and value added per capita again declined. The figures show that the herring fisheries became ever less important to the Dutch economy.

Investors reacted differently to the developments sketched above. The wealthy merchants seemed to have shifted their investments to other sectors and their place was taken over by smaller investors that combined the herring fisheries with selling supplies to the fishing companies and the export of herring. This allowed them to compensate possible losses in the fisheries itself.

Although other explanatory factors such as warfare also played their part, this study suggests that an important role in the overall development of the herring fisheries—especially during the first part of the seventeenth century—was played by the development of the seasonal catch of a buss. A minimum catch of about 40 lasts was needed to

⁹⁰ Van Bochove and Van Zanden (2006); Simon Thomas (1935); Starkey and Haines (2001); Rahn Phillips (2005).

cover the expenses, which consisted for 83 percent of non-variable costs. Unfortunately, not much is known about the dynamics behind the movement of average catches. Many variables, both on the human and biological side, which could influence the average catch rate, could potentially be identified. The biggest challenge to historians would now be to tackle this interesting problem.

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CHAPTER EIGHT

THE EVOLUTION OF PORTUGUESE FISHERIES IN THE MEDIEVAL AND EARLY MODERN PERIOD A FISCAL APPROACH

Inês Amorim

Introduction

This paper sets out to analyze the fisheries sector in Portugal in the medieval and modern periods, using essentially fiscal indicators. There are three reasons for this approach: 1. the legal concept of ownership of the seas and rivers that put the King of Portugal in exclusive possession of them, under which system he received taxes resulting from their exploitation or alienation; 2. the kind of historical papers that document this taxation, which took various forms; 3. the need to reappraise the historiographic interpretation of the evolution of the Portuguese fisheries, patent in the illuminist discourse of the mid-eighteenth century, which holds that the excessive fiscal burden on fishing and fishermen was the cause of an economic crisis in the sector.

Each of the above requires a more detailed examination. In the light of the law regulating authority over the waters (in force until 1867), the king was expressly granted rights of disposal over fishing and delegated them to lay and clerical landlords. Waters may be: 1. 'State—those that are navigable and sailable, including permanent rivers when formed by currents with those characteristics, and sources, springs, reservoirs and rainwater that are found on both public and maritime land; 2. Municipal—waters taken from public rivers for public use, even those from springs and rainwater reservoirs on public land in the municipality, for public or community use; 3. Private—waters that emerge from or flow in private property, are kept in reservoirs, or those that proceed from them to reach other property'.¹ Consequently, lay and clerical landlords, by favour or royal bestowal, or through inheritance, made fishing grounds

¹ Classification supported by Lobão (1865) examined in Pinho (1985) 10–11.

a kind of reserve in their sphere of jurisdiction or ownership. Thus, the sea, rivers and lakes were nothing more than an extension of the land and the rights over their revenues were capable of being leased. Any eminent and profitable property owner who received rights from the king could rent, give, transfer or assign these rights to third parties, which helped to produce a confused panorama of overlapping rights. Furthermore, if the king reserved certain duties for himself, sometimes these revenues were also given to landlords, or leased to administrators, under annual or periodic contracts. The consequence of these policies was to create several layers of operators between the king and fishermen, and the potential importance of the sector was likely to decline in terms of real profit for both the national economy and the fishermen.

In the light of this system of jurisdiction over sea and river resources, it is hardly surprising that the content of historical documents reflects the interests of those who owned the resources: the crown, municipal authorities, or lay and clerical landlords, while virtually ignoring the real agents of the fisheries: the fishermen, who were illiterate and lacked any oral tradition.² Charters (*Forais*), as documents that describe provisions relating to land rights and duties, fix, among other things, methods of collecting revenue on rights in rem. They have become valuable assets for diagnosing the type of collection, by whom it was collected, and to whom and to which kind of fish it related. Apart from these, customs and excise sources, too, which deal with the entry and exit of goods, reveal the movement and circulation of a catch, its size and the species contained within. These levies were sometimes rented out, showing the interest of the tenants and, therefore, of the direction taken by commercial incentives and dynamics, and by consumption.

The diversity of the charges on fishing as a whole (labour, trade, consumption) seems to have contributed to a historiographic conception that goes back to the assessments developed since the end of the eighteenth century, and which has been reiterated until today. It suggests an economic prosperity in the Middle Ages due to the actions of Portuguese monarchs in the twelfth to the sixteenth centuries, which was followed by decline, due to the lack of interest of the Crown. The Crown was far more interested in the Atlantic and Indian trade routes, and was imposing a grievous tax burden that made the activity of Portuguese fishermen very hard, and encouraged the import of fish.

² Amorim (2001).

This taxation question was examined by the academic Constantino Lacerda Lobo at the end of the eighteenth century and the beginning of the nineteenth century.³ His work, in particular in the study *Memória sobre a decadência das pescarias em Portugal*, establishes that particular periodization. Other authors joined him,⁴ underscoring the contradiction between the plentiful resources of the Portuguese coast (fish and salt) and the failure to acquire an exhaustive knowledge of fishing techniques, the crippling costs they entailed, the absence of transmission or propagation and, finally, the sporadic interest of the Crown, which only ever took the role of tax collector.

Historical research has virtually ignored the confirmation of this angle, and its significance. Considering fishing and agriculture, it has repeated the reasoning, applying to fishing the factors of decline found for farming. But the taxation issue that was proclaimed at the end of the eighteenth century is just one of the aspects of a complex process that emerged at the time and which is still keenly marked by duality. Firstly, the Crown was interested in taxing the catch, especially of salted fish from the cod fishing fields in Newfoundland.⁵ Meanwhile, the conditions present in the eighteenth century marked a fall in these cargoes and a generalized lack of fish, due to factors both external and internal. In fact the price of cod doubled between 1764 and 1794, and its poorer quality was confirmed, at least between 1740 and the end of the century. This is considered to have been the cause of a general debilitation of the poor, who suffered a widespread febrile illness.⁶

In this situation, the Crown could no longer restrict the retention of rights and payments, but instead had to stimulate and organize royal Companies, including the *Companhia Geral das Reais Pescarias do Reino do Algarve* (15 January 1773),⁷ one of six privileged companies emerging at the time. The process has already been studied, and it boils down to the organization of a largely Catalan labour force,⁸ and afterwards of

³ Lobo (1991; 1991a; 1991b; 1991c; 1991d).

⁴ Barros (1991); Silva (1991).

⁵ A privilege expressly enshrined in the charter of 14 October 1506 attributing the collection of these duties in the ports in Entre Douro e Minho and the coast to D. Manuel's officials see, Silva (1891) 434.

⁶ Capela (1987) 254; Almeida (1792) 375.

⁷ Amorim (2001a).

⁸ It is reckoned that more than 8000 women and children processed salt on Monte Gordo beach. There were a great many Catalans, who were joined by peasants and seasonal workers. Bans on fish imports, the compulsory registration of fishermen and

fishermen from Portugal's northwest coast. They had known about the new, highly productive, skills of trawling since 1751⁹ and were financed by capital from Porto and Lisbon in the form of traditional companies that would not arouse suspicion in the context of economic espionage, practised by neighbouring Spain.¹⁰ So, from the middle of the eighteenth century there was a real interest shown by the Crown in developing the exploitation of the coastal conditions (biological and technological), manifested in the creation of the Royal Companies of Fisheries and in the consideration of the Portuguese possibly returning to the deep-sea cod fisheries in Newfoundland.

However, our interest is in understanding the significance of the preceding period, and the performance of State intervention in fisheries. We also set out to find the balance between a real improvement based on the benefits and recognition of fishermen and the economic importance of fisheries based on the taxes collected on imported English cod (fresh or salted, directly from Newfoundland or England), and on obtaining royal fiscal control of certain species. Firstly, the characteristics specific to Portuguese fishing will be defined, and then the tax burdens applied to the catch will be categorized. Then we shall use these indicators to see how fishing developed.

The specificity of the Portuguese fishing grounds: an overview

The Portuguese coastline has an area of over 800 km². It sustains a diversity of features, and the specificity of the Portuguese fisheries depends on the characteristics of the coastline and the continental platform, whose resources are crucial to the wealth of maritime settlements. The continental platform is almost always parallel to the coast, extending from between 8 and 70 km,¹¹ clearly quite narrow.

The fact that Portugal lies in a bio-geographic fishing complex, washed by temperate waters, with annual average surface water isotherms of

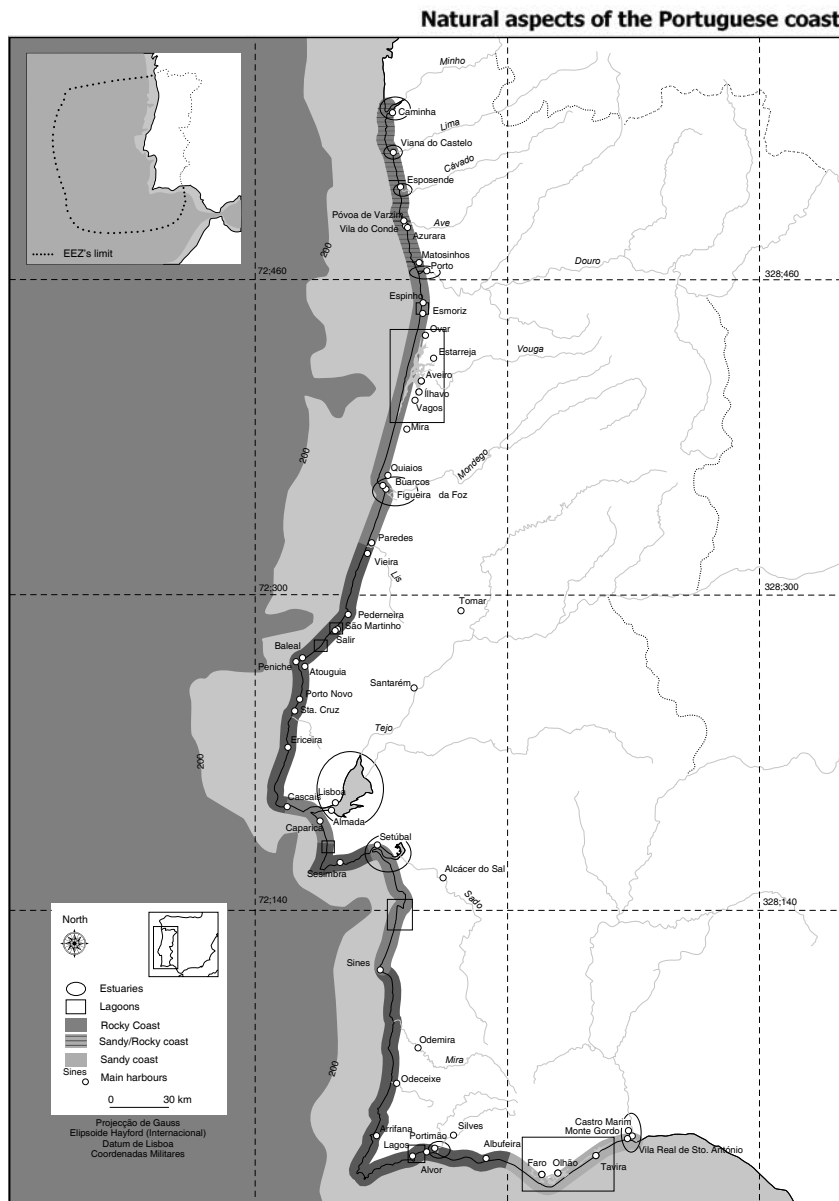
the exclusivity enjoyed by the Portuguese, drove Spanish and Portuguese alike to Ayamonte. Documents published in Correia (1997).

⁹ An effort was made, in conditions of the utmost secrecy, to recruit fishermen, calling on those from Ílhavo and Aveiro, who had been using a new Art, a new net—the trawl—a skill involving dragging, not along the bottom, with smaller mesh nets than normal Amorim (2001a).

¹⁰ Correia (1987) 299–300. Cornide (1997) 153.

¹¹ Brito (1994) 180.

Fig. 1. Map of Portugal. Natural aspects of the Portuguese coast.



about twelve degrees in the north and twenty in the south, favours the presence of numerous species (more than eighty), and also explains the lower average yield.¹²

The geological and geomorphologic characteristics mean that the sediments on the littoral processes of its coasts are exclusively sand, apart from some limited zones in the final reaches of a few estuaries (mainly the Tejo (Tagus) estuary). The coast is composed of reaches with a North-South orientation (mouth of the Minho to Cabo S. Vicente), and reaches with a generally West-East orientation (Cabo Raso to the mouth of the Tejo; Cabo Espichel to the mouth of the Sado, Cabo S. Vicente to the mouth of the Guadiana). In the reach between the River Minho and Cabo S. Vicente there is more undulation, and in the south, from S. Vicente to the Guadiana, the ocean is calmer (Atlantic versus Mediterranean).¹³

Freshwater and salt water fishing have been traditional occupations since the founding of Portugal, along with agriculture and salt production (salterns). Some records show the evolution of the freshwater and salt water ports from the twelfth to the end of the fifteenth century, including: Sines, Setúbal, Sesimbra, Cascais, Lisbon, Peniche, Pederneira, Buarcos, Aveiro, S. João da Foz, Leça de Matosinhos, Vila do Conde, Póvoa do Varzim, Fão, Viana, Caminha.¹⁴

In the rivers, fishermen caught lamprey, trout, and shad close to the sea, and in the estuaries, crabs, cockles, mussels, octopus and sole. In the deep-sea waters, tuna was fished in the south of Portugal (Algarve), and sardine in the West, while whaling was carried out all round the coast. Other species, such as whiting, flounder, conger eel, and so on, became important later on.¹⁵

Whaling continued near the Portuguese coast until the fifteenth century. And the Crown entered into contracts (the Whaling Leasing *Contrato das Baleações*, in 1340) for all the whales caught from the north to the south of the Portuguese coast. Even in the early sixteenth century, there are allusions in charters (*forais*) to the 'royal fish', like whales, porpoise and young tuna (*baleia*, *roaz*, and *toninha*) belonging exclusively to the king. However, when the whales became rarer, the Portuguese lost interest in hunting them, and Brazil and Cabo Verde,

¹² Souto (1998) 219.

¹³ Abecassis (1994) 25–29.

¹⁴ Moreno (1995) 68–76.

¹⁵ Godinho (1983) 123–125.

which were part of the Portuguese colonial empire, were alternatives explored only at the end of the eighteenth century.¹⁶

The move to the sea required the introduction of technological innovations. In the Middle Ages we find records of simple techniques being used (gillnetting, traps, baskets, hooks) or the use of natural systems formed by rocks and plants that trapped the fish when the tide was out. Fishing with lines was the oldest method until nets came on the scene: tangle-net (*emalhar*), fence-net (*cerco*) and seine-net (*arrasto*). The conflict between nets and lines is known from the beginning of the fifteenth century in the Tejo estuary, in Lisbon, where fishing with a single hook was predominant as well as the use of long-lines with a lot of hooks (*espinel*). About 1,000 people were using this technique in 1552.¹⁷ The end of the seventeenth century saw an evolution of technique when long-line fishing with multiple hooks moved to the high seas (maybe started by French fishermen). The innovation of fence-nets, probably from the north of Spain (Galicia), in the second half of the fifteenth century was successful on some beaches between Peniche and Setúbal, and later in the Algarve (see figure 2).¹⁸

In addition, there was the seine-net (enveloping). This was in use from the sixteenth century, from the River Douro in Porto to the Tejo in Lisbon, and perhaps also in Sesimbra. This consists of a bag with tight mesh, then two sleeves that finish in two 'slangs' (*mangas* in Portuguese). The method is to pull the ropes of each 'slang' until they reach the beach.

However, from the middle of the eighteenth century we find the much longer seine-net coming into use, and known as the trawl (*xávega*) (see figure 3). It was developed by the Catalans and adopted on the coast of Aveiro, whose people had traditional contacts with Galicia (because of salt), and also on the south coast, from Faro to Vila Real de Santo António.¹⁹

Those advances in techniques would have had some impact on the growth of the sector, both in terms of numbers of fishermen and in the yield of the fishing grounds. Even though it is very difficult to measure the real significance of fishermen in the Portuguese population, in fact, from 1227, a distinction or specialization was made between *marinarii*

¹⁶ Amorim (2005).

¹⁷ Brandão (1990) 201; Lapa (1953) 22.

¹⁸ Pedrosa (1985) 289–311.

¹⁹ Amorim (2001a).

Fig. 2. Fence-net (*almadrava*) Silva (1891).

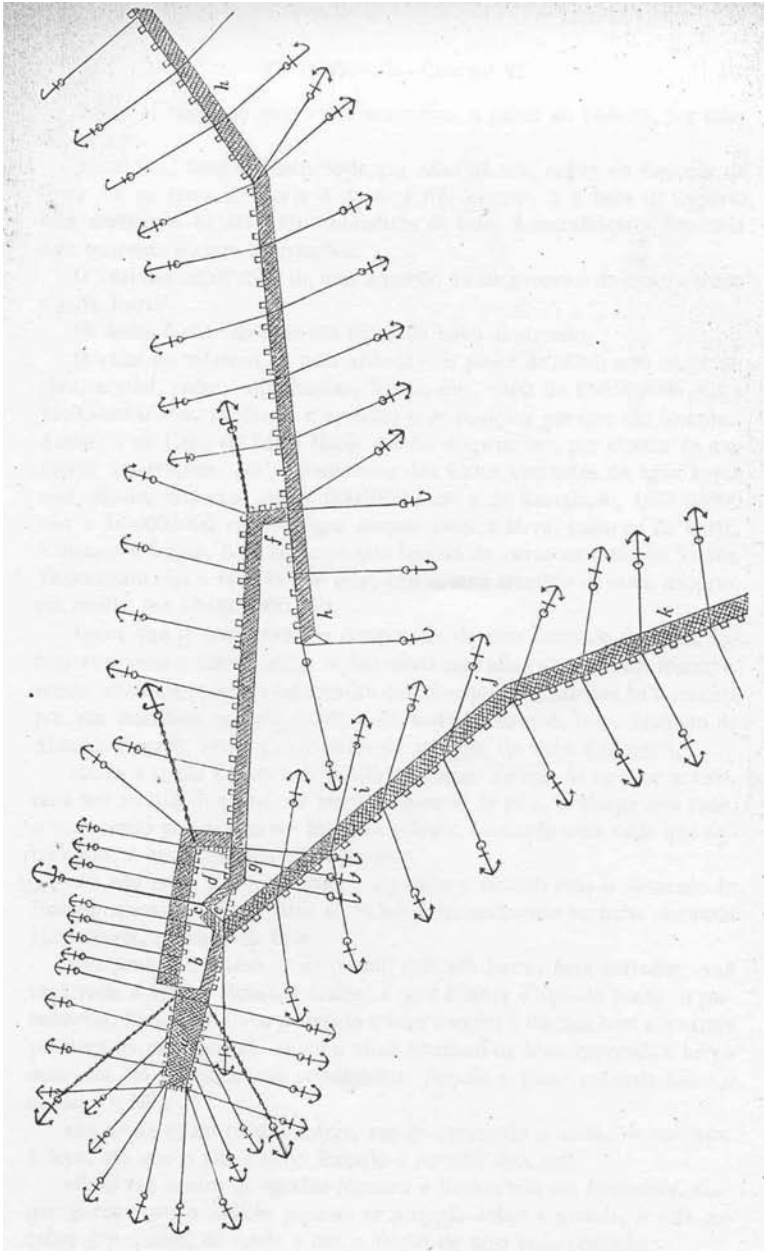
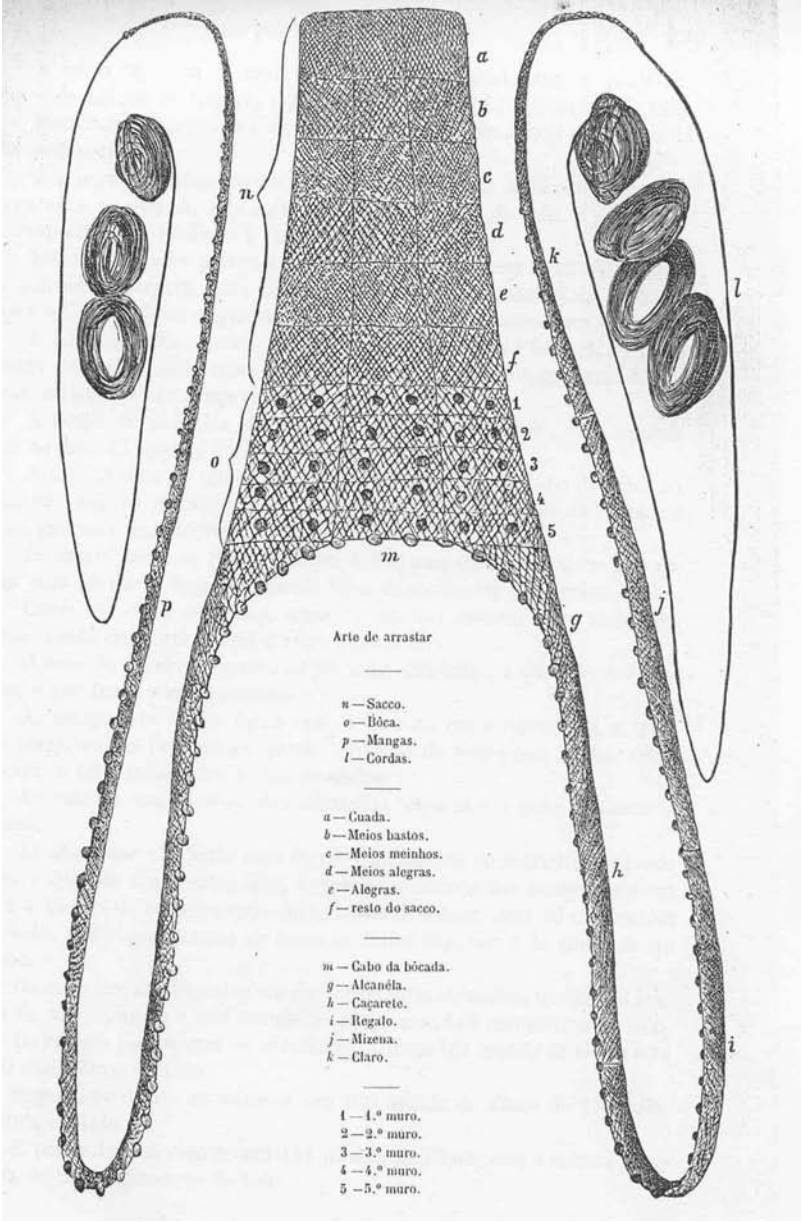


Fig. 3. Seine-net (*xávega*) Silva (1891).



(mariners) from *piscatoris* (fishermen). But it is almost impossible to know how big each group was, because the fishermen were exempted from military and navy service. This meant that, although they were protected from having to fight, by paying a tax, they were also excluded from mariners' privileges.²⁰ The few Portuguese censuses carried out, like the one we know of for Viana do Castelo in 1618, confirmed the importance of long-distance commercial trade seafarers, such as 61.5 percent of mariners, eleven percent pilots and only twelve percent fishermen (and similar occupations).²¹

The nature of duties

Although fishermen emerge fairly discreetly within society, the truth is that fish had an increasingly strategic value. Indeed, in the 1387 Cortes (periodic meetings of the king and representatives of Portuguese society), the procurators of Porto, the second largest city in the kingdom, declared that the city did not have enough corn to make bread. This was because they had not produced enough salt or caught enough fish to exchange for corn and they needed to buy fish in other markets. This became a vicious circle. In fact the port of Setúbal, in 1387, only allowed them to catch sardines if they left one *moio* (a unit of measure) of bread per *milheiro* (unit of measure) of sardines, and, if they failed to get this they could not compensate by circulating it within Porto in exchange for bread for the city.²² Two hundred years later, in 1605, they again argued about all the fiscal and customs procedures that hampered the circulation of the catch within the kingdom in exchange for supplying the city of Porto with 'olive oil, wine, vegetables, bread, etc.'²³

In the light of this episode, the strategic value of fish (and salt) to people's provisions cannot be in any doubt, and we may quite legitimately return to our proposal to consider the role of the State in regulating the sector, since it is obviously important to understanding the significance of fish consumption in the daily diet.

²⁰ The contrast with Spain is evident where, from the third decade of the eighteenth century, the *Matricula do Mar* recruited all seamen and freed them from ecclesiastical and seigniorial power. See Fernández Díaz, Martínez Shaw (1984) 553–567; Santos Castroviejo (1998).

²¹ Moreira (1995) 25.

²² Cruz (1983) 118.

²³ Silva (1988) 187.

Fish was a staple food for a variety of not unrelated reasons, including the compliance with fasting and penitential abstinences imposed by the religious calendar. According to the Porto Synodal Constitutions of 1497, there were 38 days of solemn feast days a year, not to mention all the Sundays, which include Easter, Pentecost and Trinity, as well as Maundy Thursday, Good Friday, Ascension Day, Ash Wednesday. In 1524, the records of meals of the court and town of Évora for the month of November show that they fasted every Friday and Saturday, and on other days, too, in a total of ten days. Meat, bacon and game were eaten on other days and chicken and eggs on twenty-two days.²⁴ Thus there is no reason not to believe that at least one third of the days in the year were subject to abstinence.

Consumption of fish shifted from river species to those from the sea. References to the lack of river fish, or their high price, is reflected in the way similar species were highly prized on the tables of the upper echelons of society (the royal family and diocesan prelates), exerting pressure on their price, as had happened before, in the early fourteenth century, and again in the mid fifteenth and subsequent centuries.²⁵ Their scarcity was observed from then on to some extent throughout Europe.²⁶ Of the sea-caught fish, sardine was the most usual and likely to be found on the tables of the ordinary people,²⁷ although there were some limits to its availability. Figure 4 lists the fish and shellfish received, and what it cost, (it very often had to be bought) used to feed the court of king D. João III, which spent November 1524 in the town of Évora.

Sardine was the most consumed fish (29.71 percent), but nearly 50 percent of those supplied were not used (2,085 fish). Small mackerel were not even touched. It can be seen, however, that there was not enough black bream, red mullet and small axillary sea bream for the court's taste. This breakdown shows the predominance of one

²⁴ Sousa (1997) 98.

²⁵ Santos (1995) 79.

²⁶ This decline was noted in the United Provinces: in the mid-seventeenth century, the good years for freshwater fishing had passed, as can be seen from some of the indexes relating to the rates of fish consumption. Reasons for this may be linked to the increased consumption of meat, but it is much more likely, because of the problems faced by a typical fishing enterprise, to have been due to: production costs, depletion of resources, and competition. See De Vries (1999) 235–237. Climate could have been a factor, as, in the relatively warm period of the Middle Ages (eleventh to fifteenth centuries, Little Optimum) the thaw led to a rise in the sea level and the silting up of the bars, preventing fish from moving in and out. See Araújo (2002).

²⁷ Coelho (1992) 99.

Fig. 4. Fish supplied to and used by the court of king D. João III, in November 1524, in Évora.

<i>Fish / Shellfish</i>	<i>No. Received</i>	<i>% of Fish Supplied</i>	<i>No. Used</i>	<i>% of Used</i>	<i>No. Received Minus Used</i>
Sardine	4578	41%	2493	29.71%	2085
Small Black Sea Bream	1550	13.78%	1200	14.30%	350
Black Sea Bream		0.00%	300	3.58%	-300
Sole (type)	1183	10.52%	1218	14.51%	-35
Mullet	780	6.94%	730	8.70%	50
Small mackerel	700	6.22%		0.00%	700
Dried hake	562	5.00%	540	6.44%	22
Sole (type)	369	3.28%	352	4.19%	17
Red mullet	348	3.09%	480	5.72%	-132
Sea Bream	230	2.05%	154	1.84%	76
(Axillary)					
Small Sea Bream		0.00%	63	0.75%	-63
(Axillary)					
Small Sea Bream	194	1.73%	180	2.15%	14
(type)					
Red Bream	190	1.69%	180	2.15%	10
Common Bream	64	0.57%	65	0.77%	-1
Sole (type)	48	0.43%		0.00%	48
Dried Dog-fish	24	0.21%	12	0.14%	12
Shad	16	0.14%	17.5	0.21%	-1.5
Conger Eels	1	0.01%	1	0.01%	0
Spider Crabs	8	0.07%	6	0.07%	2
Oysters	400	3.56%	400	4.77%	0
<i>Total seafood</i>	<i>11245</i>	<i>100.00%</i>	<i>8391.5</i>	<i>100.00%</i>	<i>2853.5</i>

Source: Santos (2002: 45)

species—sardine—and its low consumption by the court. Although we do not have any information on the price of each kind of fish, we do know that fines were levied on people who evaded the tax on the more expensive fish, like axillary sea bream, cloaking the most valuable fish, like red mullet and sole (as we can read in the chart—*foral* of Sines).²⁸

²⁸ Dias (1962).

The tables at court or in the houses of the gentry would have experienced no difficulty in getting supplies. The 1565 hunting and fishing law, drawn up under king D. João III's legislation (28 March 1552) stipulated the nets' meshes and established closed seasons for fishing, among other things. It alerted the fisheries' landlords (*fidalgos*) and 'ecclesiastics' to the disruptions in species' growth,²⁹ which shows that they were the main beneficiaries of the fish resources, thanks to the taxes which, for royal benefit, were levied on the catch and on the fishermen.

The methods employed by the crown to exploit fish were thus indirect in nature. One was to make 10-year contracts, as happened in 1305, between the king and Johane Momediz, and Bonanati (probably an Italian), in order to establish an *atoeira* (a net to catch tuna) and kill tuna fish between Sines and Setúbal; the king gave a loan of 1,500 pounds to be repaid in three years; the contractors not only had to provide surety, but they also had to pay the Crown a tithe and a further seventh part (23 percent) of the tuna, dolphins, porpoise and swordfish caught.³⁰ Another way was leasing, in particular the so-called 'whaling lease' in the reign of D. Afonso IV (28 September 1340). Under that lease, which was for six years, the king concluded a contract with the merchant and Lisbon neighbour, Afonso Domingues, the Squire for the exploitation of all the whale fishing from the River Minho, on the most northerly point of the coast, as far as the Guadiana estuary, in Algarve.³¹ Such contracts (and concessions to landlords) were important in the expansion along the Moroccan and Saharan coast.³²

The exception to this bestowal of rights was the Algarve coast in southern Portugal. Here the Crown wanted to establish a structure that would control the duties and channel revenues from tuna (from the early sixteenth century) and from sardines (from the beginning of the seventeenth century), creating a cadre of officials, which included the *feitor* (steward) and the *provedor das almadravas* (purveyor of tuna fisheries), with its own regulations.³³

But, in order to give us an overview of the kind of duties that applied to fishing, the charters published in the first 20 years of the sixteenth

²⁹ Collecção de leis (1891) 8.

³⁰ The contract system goes back several centuries. Godinho (1983) 123.

³¹ Marques (1988) 64–65.

³² Godinho (1983) 133.

³³ Magalhães (1970) 149, 165; Magalhães (1988) 201; 'Regimento que deixou o provedor Diogo Tavares das Póvoas em 1546 destinado ao feitor' in Silva (1966) 103; 'Regimento da sardinha e lota dela' [1620] in Silva (1966) 155.

century must be examined. Of the 570 Manueline charters (*forais manuelinos*),³⁴ which cover the whole of Portugal, we have chosen *forais* that relate to places on points of the coast or inland, on rivers and estuaries, with a variety of geomorphological characteristics (see figure 1): on the Minho estuary, Caminha (*foral* of 1512); on the Lima estuary, Viana (1512), Póvoa de Varzim (1514); on the estuary of the River Ave, Vila do Conde (1516); near Porto, to the north, Matosinhos (1514), Porto (1517), Ovar (1514), Esgueira (1515); Aveiro (1515) which almost circumscribes the Aveiro Ria and the River Vouga; Coimbra (1516), served by the River Mondego, navigable from its estuary; three inland ports on the Tejo—Tomar (1510), furthest upstream, and then Santarém (1506) and Lisbon (1500); finally, the charter of Silves (1504), which served as a base for all the others on the Algarve coast (Albufeira, Lagos, Loulé, Faro, Portimão, Tavira).

Systematizing the information, we find that there was a generalized right that assisted fishermen, known as *conduto* (conduct). This meant the fishermen were able to keep part of the catch for food or even to sell, without having to pay any tax.

By contrast, there was a range of duties payable to the king or landlord. Figure 5 describes the range of charges, indicating the varieties of tithes (*dízimas/décimas*) that stand out for their geographical prevalence. The 'new tithe' is noteworthy, reserved for the king, who allowed it a strong bargaining position at various times, as in 1499. This was the year that saw the expulsion of the Moors and the Jews from Portugal, which put an end to revenues levied on their economic activities, collected by the House of Braganza. In exchange, the Crown granted the 'new tithes' on fishing to the ports on the maritime coast. In 1530, 'new tithe' duties for all the ports on the River Tejo were added to these. The interests of the Braganzas justified a policy of exchange with other landlords. This happened in 1521, when the House of Braganza swapped the towns of Vila Alva and Vila Ruiva for the new fishing tithes of Porto, Cascais, half of that of Azurara (the other half was granted by the Crown in 1602) and that for small hake, in Setúbal.³⁵

³⁴ Silva (2001).

³⁵ Cunha (2000) 207–209.

Fig. 5. Type of charges levied on fish in Manueline charters, sixteenth century.

Name	Nature	Place
<i>Ferrolho</i>	Annual levy of 16 réis on each seafarer	Vila do Conde
<i>Navão, Nabo, Nabão</i>	One fish per vessel	Caminha, Viana, Vila do Conde
<i>Mordomado, baciada</i> (or <i>baciagem</i>)	1 fish per batch of fish (1 per 20)	Ovar, Aveiro, Silves
<i>Quarentena</i>	1 fish per 40	Esgueira
<i>Alcaiadaria</i>	2 of the best hake, gurnard and bream	Coimbra
<i>Açougagem</i>	Sale of fish from bowls or boards	Porto, Coimbra, Tomar, Santarém and Lisboa
<i>Condado</i>	Tax on exit of catch	Porto
<i>Portagem</i>	Sale of fish by defined loads entering the municipality	Caminha, Póvoa de Varzim, Porto, Aveiro, Coimbra, Tomar, Santarém, Lisboa
<i>Décima or dízima eclesiástica</i>	A tenth (tithe) of the catch to be given to the Church	Caminha, Viana, Póvoa, Vila do Conde, Ovar, Esgueira and Aveiro
<i>Décima velha</i> or <i>dízimo</i>	A tenth of the catch that may, or may not, be given to the Church	Caminha, Viana, Vila do Conde, Póvoa de Varzim, Matosinhos, Porto, Coimbra, Santarém, Lisboa
<i>Décima nova</i> or <i>dízima nova</i>	A tenth of the catch, that was due to be given to the king	Caminha, Viana, Vila do Conde, Póvoa de Varzim, Matosinhos, Porto, Ovar, Esgueira, Aveiro, Santarém, Lisboa
<i>Redízima</i>	A tenth of the <i>dízima velha</i> of the fish, once the Brotherhood's tenth had been taken	Silves

- a. *ferrolho*—an individual tax, referred to only in Vila do Conde; that is, a levy on any man in the town, whose amount for the 'fishermen and seafarers' was greater than for 'others on the land'.
- b. *nabo* or *Nabão*—paid by fishermen from Caminha (*nabão*), Viana do Castelo (*nabo*), Vila do Conde (*nabo*)—was a fish for each vessel that entered the respective port;
- c. *mordomo*, *quarentena* and *alcaiadaria*—was paid in Ovar and Aveiro, while in Silves (and throughout Algarve), it was also called *baciada*. In all cases it was a percentage of the total catch. The type of charge seems to be similar to the *nabo* or *quarentena* paid in Esgueira, and the *alcadaria*, paid in Coimbra.
- d. *açougagem*—assumed selling on the market, in a public place, from specific containers
- e. *portagem*—related to selling in predefined loads outside the locale, and in these cases, only people outside the municipality would have paid this tax, while the *condado* was a charge levied in Porto on the catch that went out of the city

- f. the *dízimo a Deus* (tithe for God) was an almost systematic tax featured in the charters of Caminha, Viana, Póvoa, Vila do Conde, Ovar, Esgueira and Aveiro. In Aveiro, it stated that it only applied to fresh fish
- g. the *dízima nova* ('new tithe'), to distinguish it from the *dízima velha* ('old tithe'), an earlier levy, arose as a result of fishermen being exempt from military service, in 1420, authorized by the king as long as they had proved they were doing this work for 8 months and they would pay one tenth of the catch.³⁶ Apart from Coimbra and Tomar, all municipalities used to pay the 'new' tithe, almost always to the king, except for Vila do Conde, which paid it to the Santa Clara Convent. Note, too, that the Aveiro charter expressly alludes to the tithe on cod, warning of the possible change of the duty and method of collecting the tax.
- h. *dízima velha* ('old tithe'), came, as the name implies, before the one levied in 1420. In the charters studied, this was found in Coimbra, Viana, Póvoa and Vila do Conde, Matosinhos, Porto, Coimbra, Santarém and Lisbon. In Viana, one third went to the Crown and the rest to the Church. In Póvoa and Vila do Conde it reverted to the Convent of Santa Clara de Vila do Conde. In Matosinhos and Porto it went to the Church. It was also levied in Coimbra, Santarém and Lisbon.
- i. *redízima* is a tithe on the 'old tithe', and was only found in Silves, applicable to the Algarve charters. It reverted to the religious brotherhoods of the fishermen.

Source: Dias (1962)

Fig. 6. Fishing *dízimas* (tithes) collected by the House of Braganza.

1499	Darque, Vila Nova de Cerveira, Póvoa de Varzim, Vila do Conde, Fão, Esposende, Ericeira
1520	Porto, Cascais, half of Azurara, small fish Setúbal
1530	Ribatejo ports: Vila Franca, Povos, Castanheira, Azambuja, Benavente, Samora Correia, Alcochete, Alhos Vedros, Lavradio, Barreiro
1602	The other half of Azurara

Source: Cunha (2000: 207–209)

It would appear that, even though the Crown granted fishing duties to lay and clerical landlords, it rarely released its grip on salted fish, especially cod. In Lisbon, in fact, while the Duke of Braganza received the overall fishing tithe, from 1490 the *sisá* (a transfer tax) on cod always belonged to the king. The same happened in Viana do Castelo. Here, in 1596, the Marquis de Vila Real challenged the Realm's customs inspectors and the customs magistrates in Viana do Castelo by wanting to receive the tithes on the cod catch. The Marquis used to receive the old and new

³⁶ In the time of D. João I (8 January 1420) the *dízima nova* (new tithe) came to replace the so-called *vintenas do mar* ('twentieths of the sea') and the coastal defence service provided by the fishermen.

tithes on the catch in 1499. But at that time this did not relate to the deep-sea cod fishing. The Marquis won his case in 1602, but the king's argument was based on the fact that the House of Braganza should have been given the Lisbon catch tithes that did not include those on cod.³⁷ Adding what we know about Porto with respect to the *sisá* on cod, which was for the king, and then the explicit designation in the Aveiro charter (*foral*), we can see the particular interest in the tithe on the Newfoundland fishing grounds. This was hardly ever alienated by the king, given that a permit dated 14 October 1506 ordered that this duty on cod should be exclusively collected by officials of the king, D. Manuel, in the ports between Entre Douro and Minho.³⁸

The king likewise kept his grip on the sale of fish outside the kingdom, as may be seen in the permit of 30 January 1615, which declares the claims of the Conde de Atouguia, of Peniche were void, through the arrangement he had made with the fishermen for them to pay him a certain amount on each caravel sold to Spain (Castile) and elsewhere.³⁹

Fisheries and duties: a difficult equilibrium

The final issue to be examined is the importance of collecting the taxes as an indicator of both the general evolution of the activity and the commitment of the Crown to encouraging fishing. One of the sectors that had been of greatest interest to the Crown, at least in the fifteenth and sixteenth centuries, was the revenue from tuna fishing in the Algarve tuna fisheries, as mentioned earlier.⁴⁰ This even justified the appointment of royal officials to oversee the proper administration of the revenues from the fisheries. Income was usually estimated on the basis of the catches of previous years and future prospects. The data in the chart below shows that the value for the year 1575 was high, and that it fell to almost half in subsequent years.

The 1620s and, more especially, the 1630s, saw a fall in revenue. Agricultural prices in general certainly eased all through the seventeenth century, but even when prices rose, in the mid 1600s, revenue continued to fall. In fact, towards the end of the sixteenth century, grain prices

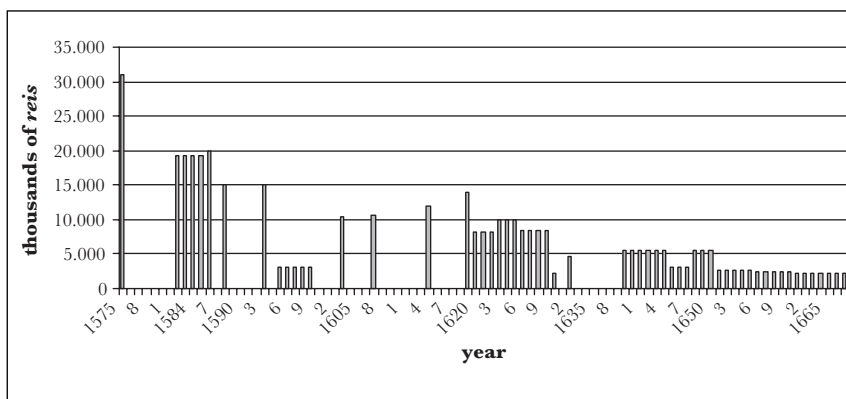
³⁷ Moreira (1987) 82.

³⁸ Silva (1891) 434.

³⁹ Collecção de leis (1891) 14.

⁴⁰ Magalhães (1970) 149, 165.

Fig. 7. Revenue from tuna fishing in Algarve (1575–1667).



Source: Appendix 1

tended to fall, and there was a depression in the 1620s (bottoming out in 1625). It was not until the mid-seventeenth century that they took an upward turn, levelling out until 1690. To some degree they followed the general movement of the population. During this century the growth was spectacular (0.8 percent a year between 1527–1580), followed by a decrease marked by scarcities, epidemic diseases and economic crises. The new growth was between 1660 and 1706 (0.43 percent).⁴¹ In the present case, ‘Revenue from tuna fish in Algarve’ (1575–1667) the reasons seem to be linked to the decline of tuna in Algarve waters, a situation that was marked by pirate attacks and a change in the traditional Mediterranean markets of Sicily and Italy, which succumbed to northern cod.⁴² In the meantime, the tuna crisis seems to have awoken an interest in the Crown to levy taxes on other Algarve sources. Dated 1620, the *Regimento da sardinha e lota dela* (Regulation for sardine and its sale),⁴³ in which the three stewards (one in Tavira, one in Faro and another in Lagos), with their officials and clerks, sold and despatched sardines, enforcing the payment of *quintos* (fifths—twenty percent) of the catch, that is, ten percent for the old tithe and another ten percent

⁴¹ Godinho (1970) 170–178; Godinho (1955) 159; Ferro (1995); Sousa (1993) 248–249; Rodrigues (1993) 211–223; Serrão (1993) 50–54; Cascão (1993) 425–426.

⁴² Magalhães (1988) 201.

⁴³ Silva (1966) 155.

for the new one, and, further, *sisá* on the purchase (ten percent) and exit (another ten percent), on fresh, unsalted and unsmoked sardines, plus yet another five percent on the purchase and resale of salted or smoked sardines. If they were resold, another half-*sisá* (five percent) was payable, plus another five percent if they left the kingdom. The interest in this fish certainly testifies to a growing demand, warranting a law to create conditions for foreign merchants, such as the Regulation of 1620, which established the prompt provision of food, houses, smokers, salt, caravels and small boats for fishermen, reducing taxes in times of scarcity. Unfortunately, we have no quantitative information on the revenue from sardine fishing.

Another relevant indicator for certain fishing sources was *sisá*, a local tax that became permanent and widespread in the time of D. João I, in the fourteenth-fifteenth centuries. The Crown was always keen to keep the *sisá* for itself (on the entry and exit of goods in general), because of its steadily rising yield throughout the fourteenth century.⁴⁴ *Sisá*, however, was given to the people in exchange for a set sum, from 1527. In some cases it was paid to the local councils instead of the customs and excise office, until the end of the eighteenth century.⁴⁵ Among the various goods to attract *sisá* on entry was hake, both fresh and salted, the rate being ten percent of its value.

The records of *sisá* collected can thus be a good indicator of how the catch as a whole circulated, regardless of the type of fish. Bearing in mind the *sisá* data for imports in Viana do Castelo, only existing for 1566, we can see that the value of *sisá* on the catch and on other goods from Spain was significant; cod from Newfoundland was worth nearly thirteen percent of the total *sisá*, not counting mackerel and other fish from the Atlantic Islands. Furthermore, in 1566 and 1567, five vessels from Newfoundland, with Portuguese crews and laden with almost 400 thousand cod, unloaded their cargo in Viana. The consumption of cod was thus organized in this town in 1557, because the municipal records indicate that it was used to provision vessels bound for overseas (Brazil and the Cape route), and that the price was regulated, though

⁴⁴ Pereira (1983) 25.

⁴⁵ Silva (1990) 25–28; Magalhães (1994) 30–47.

Fig. 8. Value of *sis*a for Viana do Castelo in 1566.

<i>Place of origin</i>	<i>Product</i>	<i>Réis</i>	<i>%</i>
Northern Spain (Galicia, Asturias, Biscay)	Fish, pitch, timber, iron	313 000	36.87
Brazil	Sugar	155 000	18.26
Newfoundland	Cod	110 000	12.96
Algarve	Dried fruits, almonds, esparto grass	100 000	11.78
Flanders, France and England	Cloth, ship-building equipment	70 000	8.24
Azores and Madeira	Fish, hides, sugar	9000	1.06

Source: Fernandes (1995) 298

the drying of *bacalhau verde* (slightly salted cod) within the town was banned because of the unpleasant smell it caused.⁴⁶

While it was well-known that Portuguese vessels were engaged in cod fishing at the time, as borne out by the fact that there were at least ten vessels bound for Newfoundland, in 1580,⁴⁷ and that in 1585, too, a ship sailed from Porto, hereafter foreigners enter the picture. At the turn of the sixteenth to the seventeenth century, there appears to be a lack of interest on the part of the Portuguese to organize fishing campaigns. The cod coming into Porto in May in 1597 was carried on two Biscayan vessels, and in June it was brought by one from Stockholm and another identified as being from Germany. In October 1598 a boat with a cargo of dried, salted cod came straight from Newfoundland in a boat, *Santa Maria*, whose captain, called Yllaria Esclaveto seems to have been from neighbouring Galicia or Catalonia. In September 1599, a Frenchman, João Guterres, entered Porto harbour after sailing from Newfoundland.⁴⁸ Nothing more is known about the sources for the visit to the boats.

But it might be thought that these characteristics would be equally true of the Biscay coast. Here, and in the port of Bilbao, after a promising average of 3.8 vessels between 1560 and 1585, only one voyage per year is recorded between 1586 and 1599, except two in 1594, and two

⁴⁶ Moreira (1995) 298.

⁴⁷ Neves (1971) 64, memorandum of 9 April 1580.

⁴⁸ Ferreira (1977) 94–107.

in 1599. This fall can be ascribed to the war between England and Spain (1585–1604) and France and Spain (1595–1598), and the hostilities with Holland that led to the 1596–1609 war, when all ships and boats were requisitioned by the Spanish crown. After this, the activity was never resumed because of the threat from pirates, the absence of seamen and lack of capital for venturing into this enterprise.⁴⁹ Deep-sea fishing did indeed require a large amount of capital, both to organize and finance fishing operations and to take care of the marketing, which would only be recovered in the long term. If there were more profitable routes to the Atlantic Islands, Brazil, and the Antilles, and if the income from selling cod only materialized a year to eighteen months after equipping the expeditions (they would leave in March and return in the Autumn), then investment in cod fishing was not justified when alternative trade seemed much more promising.⁵⁰

It seems, then, that bringing cod onto Portuguese boats had a secondary importance, as was the case in the north of Spain. Yet it still came into Portuguese ports. Analysis of the sums of *sisá* levied on catches coming into the city of Porto, though not distinguished in terms of the type of fish handled, does show, as indicated above, that plenty of fish entered. Comparison with the value of leases in the tuna fisheries of Algarve could give us an indication of the general trend of catches landed from the end of the sixteenth century to 1640.

The chart shows falling revenues, in both cases, notably in 1596 to 1599. This trend was confirmed in Porto in 1597 by the banning of the resale and even salting or despatching of the catch from the city, which came from the Algarve and even Galicia. To prevent speculation, contact between the fishwives and the sardine boats was forbidden.⁵¹ The situation seems to have changed in the early seventeenth century, judging from the increased earnings from catches entering Porto, in 1603, to be precise. One fact that cannot be ignored when understanding the trend of the *sisá* values is concerned with the evolution of licences for selling points issued by Porto city council: in 1592 the authority licensed 30 people to sell small fish; in 1597 the figure dropped to 25, and in 1604 it rose again to 40, many of whom were selling fresh fish and, an unprecedented novelty, dried fish.⁵² The discrepancy between

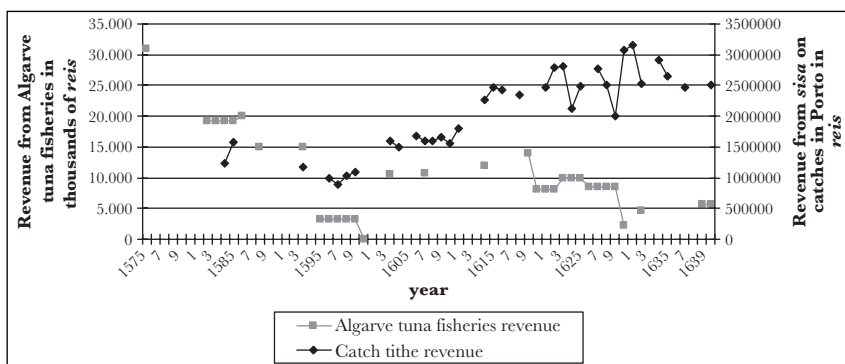
⁴⁹ Huxley (2001) 66–69.

⁵⁰ Fisher (1984) 109; Hanson (1986) 223.

⁵¹ AHMP, Livro de Acórdãos, 1587.

⁵² Silva (1988) 750.

Fig. 9. Earnings from Algarve tuna fisheries and *sisá* ('new tithe') on Porto catches (including cod) (1575–1640).



Sources: Appendix 1 and 2

the two curves arises in the 1620s, when *sisá* from Porto—despite the fluctuations—reached values twice those of the early part of the century. If these figures are to be believed, they reflect an increasing supply of fish, of whatever kind.

But references to the lack of fish appear constantly during this period, to the point that the city council was still imposing measures in 1622, a year of plentiful fish, to ensure that it did not escape elsewhere.⁵³ Fish was also scarce in Vila do Conde, to the north of Porto, and its exit was forbidden in 1617.⁵⁴ There was, in fact, a shortage, since, in around 1621, in Viana do Castelo, traders were banned from buying sardine from Galicia, since it was cheaper there than in Viana, which discouraged Viana's fishermen from putting to sea. This could be a sign of speculation, however.

This does seem likely, because in 1625, in Viana do Castelo, the English were roundly accused of raising the price of cod and the local authority intervened to fix prices. This was artificial manipulation of the market. Cod was being landed in Galician rias, from whence it came to Viana do Castelo where it was stored by the English and then sold at high prices, clearly suggesting that cod could wait for 'the highest price in times of want and scarcity'. So, there was plenty of dried, salted, cod, which was sold at top prices, with serious consequences for the

⁵³ Silva (1988) 747.

⁵⁴ AMVC—Livro Vereações, 16, fol. 208v–210.

‘poor, because this was the staple fish for the man in the street’.⁵⁵ The eventual solution was for valuers from the two parties—the English and the council—to set the prices.

Also in 1625, Porto organized the marketing of cod in the wake of complaints about speculation, creating a kind of regulated market for it, safeguarding supply and protecting wholesalers and retailers. It was established that:

- cod coming into Porto would be sold for nine days, in small quantities, by the ship’s traders, and by them alone;
- during this period, the fish sellers and traders on land were banned from bidding for fish to resell it;
- after the nine days were up, trade was completely free, but the resale price could not exceed the limits set;
- resale of the catch outside the city required the prior permission of the council;

Meanwhile, the council compelled the traders to go to the Town Hall to take note of the price they were bound to ask; it fixed the maximum resale prices; it required everyone who wanted to import fish, Portuguese or foreigners, to get a licence, apart from those who wanted to go straight to Newfoundland, which they could do without a licence; it required people who wished to become retailers to acquire the respective licence, issued by the council and to swear an oath to comply with the rules.⁵⁶

It is concluded that the presence of foreigners necessitated particular measures, which the council adopted for the sake of public supply. The trade was almost wholly in the hands of foreigners like the Flemings, while the political situation did not confuse them with the Dutch, replaced by the English, who shared with the French, a community not to be ignored.⁵⁷ In Viana do Castelo, in 1604, there were no masters of cod cargos apart from English ones. In Porto, in 1639 or thereabouts, the cod trade was controlled by the English, and this trade accounted for twenty percent of all goods and fifty percent of the cod landed.⁵⁸

⁵⁵ Moreira (1984) 90.

⁵⁶ Silva (1988) 754.

⁵⁷ Silva (1988) 333; Ferreira (2004) 101; Ferreira (1995) 96.

⁵⁸ Silva (1988) 755; Ferreira (2004) 98.

A sign of this ascendancy, which was also noted in Lisbon, Portugal's capital, is the fact that there were more and more questions about the retailing of cod, a right that used to be exclusive to the Portuguese. But in 1638 the crown allowed the English into the retail trade, alleging that they were supplying fish to the poor, especially as the mule-drivers took the sardine catch from the coast inland, making it hard to come by, to the detriment of 'the city's poor'.⁵⁹ In the meantime, the municipality complained because it was losing part of the duties and fiscal control.

The list of prices that we found, albeit with considerable gaps, showed an upward trend in the early seventeenth century, and a rise in the 1640s and following decades. In 1653 prices went up, in reproof of the English and the negligence of the king.⁶⁰

The question, then, is related to the factors that led to this dominant English presence in Portugal. Porto is a good place to observe, given the aspects mentioned above. It contained a core of English merchants sufficient to warrant the appointment of a 'tongue'—a translator—and, in 1618, two of them.⁶¹ It is legitimate to believe that the presence in Portugal of Englishmen from Newfoundland was due to the possibility of seasonal linking with wine⁶², and the fact that the cargo justified the journey. This justification seems to be documented in 1678⁶³, below, and it had to be in force before then, at the beginning of the seventeenth century. We would thus put forward a few suppositions:

- 1– familiarity with consumption of cod, the way having been paved by the initiative of Portuguese vessels engaged in cod fishing in Newfoundland;
- 2– the existence of salt of good enough quality to salt fish;
- 3– the presence of groups of French and English merchants involved in supplying corn, as in Porto and Viana do Castelo, who replaced the Flemings and Dutch, who always carried corn;⁶⁴
- 4– the political vicissitudes that favoured opening the doors to an expanding English economy;

⁵⁹ Hanson (1986) 223.

⁶⁰ Mauro (1989) 1: 379.

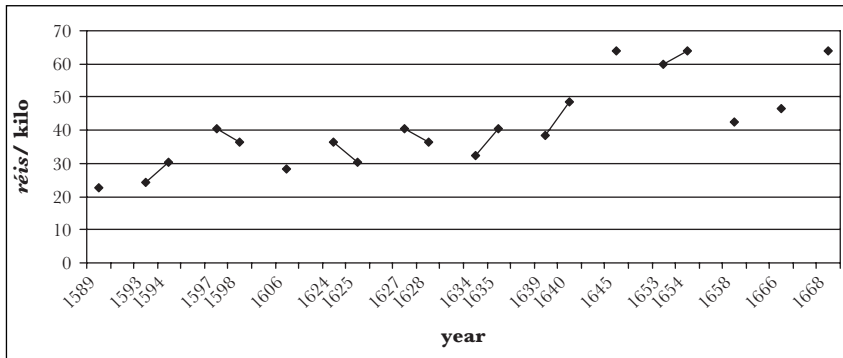
⁶¹ Silva (1988) 335.

⁶² Grafe (2004) 8–10.

⁶³ Brito (2000).

⁶⁴ Silva (1988) 121.

Fig. 10. Price per kilo of dried salted cod, 1589–1668.



Source: Appendix 3

5– the complicity of the Portuguese crown that fed off the duties on the landing of salted cod, offsetting the fall in other revenues, especially—as we have seen—from the traditional income from the tuna fisheries.

Conclusion

It can be said that cod, and, certainly, sardine, were the acknowledged staple food supply for the ordinary people in the investigated period⁶⁵, and they became desirable goods for raising revenue.

In this context, it is not surprising that the direct management of the fisheries should be less and less a matter for the central government and fall more and more to the jurisdiction of local government and private landlords. But in 1588, the tuna fisheries in the Algarve accounted for 1.3 percent of the State's tax revenue, while in 1607 the figure was just 0.7 percent, and in 1681 and 1716 there is no remnant of the tuna fisheries

⁶⁵ An example is Vila do Conde council, in 1697 AMVCO—Book 48, fl. 64 '(...) And then they shall agree in this council that the people are in need of fish and to supply this want they shall order that Maria Gomes, Joanna Gomes Ponte de Lima and Ancelmo Pascoa Manoel be notified to send to fetch cod sardine for the city of Viana Port to bring it to this town to sell to the people which will sell below our advice and set price and will bring a certificate of the price because it bought it about which they ordered this provision to be drawn up that they will sign and I Manoel Vieira Clerk to the Council the price list that I have written'.

revenue in the State earnings. It was probably incorporated into other headings, which shows that it had become negligible.⁶⁶

It comes as no surprise, then, that local councils should come to regulate fishing: they assumed the right to demarcate fishing zones, fishing shifts (rotating fishermen for the same resources), net mesh size, exclusion of fishermen from outside the municipal area, allocation of areas or periods of time, depending on the techniques used. These operations went on in various places on the Portuguese coast: Viana do Castelo (1561); Coimbra (1624); Aveiro (1758);⁶⁷ Esposende,⁶⁸ and Santa Marinha de Vila Nova de Gaia.⁶⁹ Vila do Conde would be a good place to look at. Here, the Convent benefited from various duties, including artificial ponds created to hold water in the weirs of its watermills. This process is documented for the period 1570 to 1645.⁷⁰ The economic value of this fishery, which was said to include large quantities of shad, lamprey and other fish, meant that it became a point of conflict of interests of the public in general and the administrative structure of the municipality in particular. Vila do Conde's parish records for 1758 resound, almost two hundred years after the quarrel in question, with the memories of the conflictual relations between the people and the Santa Clara Convent, triggered by the repeated attempts of the latter to enclose parts of the river fisheries and the intervention of the local council.

Throughout this historical process, sophistic royal interventions to settle disputes on the exploitation of fisheries can be observed, whether these disputes were between fishermen and landlords or between landlords.⁷¹ The Crown's relation was thus a relation remote from the resources, based on the collection of duties that would often function not only as a way of boosting fiscal revenues, but also, and essentially, as a political bargaining tool.

The systematic entry of cod, brought by the English and other foreigners, which helped to increase revenue from *sisá*, as we have seen,

⁶⁶ Magalhães (1988) 195.

⁶⁷ Examples of this: in Vila do Conde: 'taking turns to cast' (AMVCO—Book 29, fl. 93. Council minutes of 20 March 1641); Book 30, fl. 101v. Council minutes of 15 March 1715); in Viana do Castelo, (Council Minutes of 1561), in Abreu (1987) 66; Coimbra, 1624, in Oliveira (1976) 333; Aveiro, 1758, in Amorim (1997) 501.

⁶⁸ Losa (1985) 99–103.

⁶⁹ Costa (1983) 153–165.

⁷⁰ Amorim, Polónia (2001c).

⁷¹ An inventory is yet to be compiled, but Lobo (1991b) does give several examples of complaints submitted to the Cortes.

helped to smooth the irregular supplies from Portuguese waters, under the complicit gaze of the king and watchful gaze of the local people. While cod certainly lent itself to speculation, it is nevertheless true that it did help to satisfy the hunger of the people, at least until the middle of the eighteenth century.

APPENDIX 1

Annual revenue from leasing the tuna fisheries

Year	Annual revenue <i>Réis</i>	Year	Annual revenue <i>Réis</i>
1575	31 000 000	1644	5 600 000
1582 to 1586	19 188 104	1645	3 200 000
	or		
	19 88,104		
1587	15 000 000	1646	3 200 000
1595 to 1600	15 976 782	1647	3 200 000
	(or		
	319,556.00		
	per year)		
1603	10 500 000	1648	5 640 000
1607	10 686 000	1649	5 640 000
1614	12 000 000	1650	5 640 000
1619	14 000 000	1651	2 610 000
1620	8 120 000	1652	2 610 000
1621	8 120 000	1653	2 610 000
1622	8 120 000	1654	2 610 000
1623	10 000 000	1655	2 610 000
1624	10 000 000	1656	2 440 000
1625	10 000 000	1657	2 440 000
1626	8 500 000	1658	2 440 000
1627	8 500 000	1659	2 440 000
1628	8 500 000	1660	2 440 000
1629	8 500 000	1661	2 310 000
1630	2 141 393	1662	2 310 000
1632	4 609 000	1663	2 310 000
1639	5 600 000	1664	2 310 000
1640	5 600 000	1665	2 310 000
1641	5 600 000	1666	2 310 000
1642	5 600 000	1667	2 310 000
1643	5 600 000		

Source: Magalhães (1988) 196

APPENDIX 2

Revenue from sisa for Porto

Year	Réis	Year	Réis
1584	1 230 000	1616	2 420 000
1585	1 570 000	1618	2 355 000
1593	1 180 000	1621	2 460 000
1596	1 000 000	1622	2 800 000
1597	900 000	1623	2 810 000
1598	1 040 000	1624	2 120 000
1599	1 100 000	1625	2 480 000
1603	1 600 000	1627	2 765 000
1604	1 505 000	1628	2 500 000
1606	1 680 000	1629	2 000 000
1607	1 600 000	1630	3 070 000
1608	1 605 000	1631	3 160 000
1609	1 660 000	1632	2 520 000
1610	1 565 000	1634	2 920 000
1611	1 810 000	1635	2 660 000
1614	2 270 000	1637	2 460 000
1615	2 470 000	1640	2 500 000

Source: Silva (1988) 895

APPENDIX 3

Cod prices (in réis) in Portugal (Porto and Lisbon)

Year	A. <i>arroba</i> (15 kg)	B. <i>arrátel</i> (pound)	kg
1589	340		22.6
1593		12	24.2
1594		15	30.3
1597		20	40.4
1598	640	18	36.3
1606		14	28.2
1624		18	36.3
1625		15	30.3
1627		20	40.4
1628		18	36.3
1634		16	32.3
1635		20	40.4
1639		19	38.3
1640	640	24	48.4
1645	960		64
1653	900		60
1654	960		64
1658	640		42.6
1666	700		46.6
1668	960		64

Source: Mauro (1989) 379; Silva (1988) 757

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SECTION THREE

CONSUMPTION, COMMUNICATION AND COOPERATION

CHAPTER NINE

CARP IN THE CITY FISH-FARMING PONDS AND URBAN DYNAMICS IN BRABANT AND HAINAUT, C. 1100–1500

Chloé Deligne

The supplying of fish to medieval cities

Research studies focused entirely, or partly, on freshwater fish, fishing, or fish farming in the Middle Ages usually fall within the scope of the history of hydraulic techniques, food, or the history of the domain. Generally speaking, they shed much light on the management of fish farms belonging to princely or ecclesiastical domains, but reveal significantly less about the relationships between fish and urban dynamics in terms of socioeconomics and transformations to the peri-urban landscape, even though cities were the best outlets for fish-farming production. This disparity is all the more apparent given that, on the one hand, a great deal of research studies, and in particular most research studies in urban history, have underlined the importance of the control of principal markets (grains, meat, fish, fat and drinks) in the supplying of cities, and that on the other hand, many research studies have shown the importance of fish in the diet until the end of the eighteenth century.

According to studies in the history of food, it is clear that fish has occupied a special position in history.¹ All foodstuffs have experienced more or less pronounced periods of predilection and neglect, yet probably no other vanished so markedly as fish did between the Middle Ages and the contemporary period.² With the high cost of freshwater fish making it a luxury and the fact that eating it was considered prestigious, it was probably more customary on the tables of princes and prelates than on those of the common people.³ Nevertheless, the dietary dictates

¹ Due to their number, they shall not be all mentioned here. For information only: Laurieux (2002); Hoffman (2000); Flandrin and Montanari (1996); Montanari (1988); Bérard (1986).

² Bérard (1988).

³ Holt (2000); Libert (1992); Sommé (1968); Chevalier (1968); Dyer (1988).

of the Church applied to everyone and the observance of fasts meant that people ate fish once every four days or even once every three days.⁴ The most devout and the majority of religious figures went as far as eating fish every two out of three days. Furthermore, cities were home to large concentrations of people who were most likely to eat fish on the days when the Church ordered them to abstain from meat, for that is where most princes, high officials, dignitaries, religious figures, and the wealthy resided. By focusing on certain cities in the present-day Belgian provinces of Hainaut and Brabant, and in particular on the Brussels region situated in the centre of these two areas, this article will examine the complex relationships between urban fish-farming production, society, and the environment.

The origins of freshwater fish farming

According to R. Hoffmann, whose theories are supported by particularly innovative research, intensive fish culture began in Europe in the region between the Loire and the Rhine rivers.⁵ From the years 1100–1150, an increasing number of textual references were made to the creation of ponds—or, more specifically, groups of ponds—in this geographical area. This suggests the existence of fish farming based on the functional differentiation of ponds and a cycle lasting several years, as it is well known for the fourteenth century. In the cycle, each pond had a different size and function, and contained fish grouped according to age. The smallest and shallowest ponds, which were also the warmest, were used for fry production, whereas the biggest ponds were used for growth and fattening. The fish were transferred from one pond to another each year, beginning with the smallest and gradually moving on to the biggest. It is difficult to obtain definite proof of the existence of this fish-farming practice as early as the eleventh and twelfth centuries for certain parts of the region, due to a lack of any narrative description of such activities. However, the development of a series of ponds, separated by dykes and supplied by canals, is an indication that a functional differentiation of these ponds did in fact exist.⁶

⁴ For information only: Deligne (2003); Benoit (2002); Laurieux (2002); Libert (2001); Aston (1988).

⁵ Hoffmann (2000); Hoffmann (1996); Hoffmann (1995²).

⁶ Hoffmann (2000); De Gislain (1984).

Whatever the case may be regarding these possible fish-farming techniques in the eleventh and twelfth century, it is certain that the introduction and exploitation of a new species of fish marked a critical turning point in the history of European fish farming. The common carp, a particularly robust and prolific fish from central Europe, appears to have been introduced in hydrographic basins in northwest Europe perhaps as early as the twelfth century, but more probably during the thirteenth century, as evidenced by archaeological findings and written references.⁷ The first references to this fish generally appeared in princely or ecclesiastical records, which for Champagne and Paris date from 1258. The records for the county of Namur begin in 1289, for Hainaut in 1308, for Burgundy in 1315 and for Brabant in the middle of the fourteenth century.⁸ Archaeological excavations in the Flemish geographical area indeed confirm this chronology.⁹

Fish farming in Brabant and Hainaut

With the exception of Antwerp and Bergen-op-Zoom, which are seaports, the cities in Brabant and Hainaut are all located inland (figure 1). For a long time, therefore, cities such as Brussels, Nivelles, and Leuven in Brabant, and Mons, Binche and Halle in Hainaut, relied on the exploitation of local resources for fresh fish supplies.

According to current knowledge, references to '*viviers*' (in Middle French) or '*vijvers*' (in Middle Dutch), which are terms designating ponds intended for fish farming, have been found for the twelfth century in Brabant and Hainaut. Documents from the High Middle Ages for these two regions make no reference to the existence of fishponds. There were certainly reservoirs intended for the capture and preservation of fish, such as those mentioned occasionally for other neighbouring regions. However, they were surprisingly limited in number.¹⁰

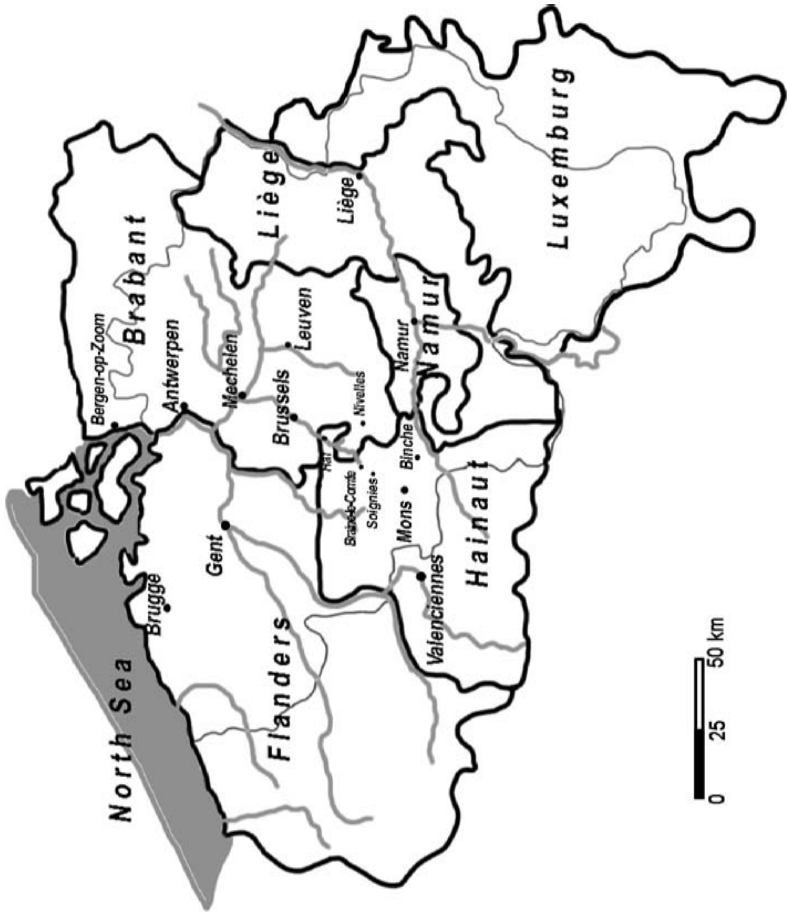
⁷ Hoffmann (2000); Marinval and Benarrou (2006).

⁸ Marinval and Benarrou (2006); Benoit (2002); Hoffmann (1995¹); Pinchart (1884); Piérard (1971).

⁹ Van Neer and Eryvynck (2004); Van Neer and Eryvynck (1994).

¹⁰ Most documents from the High Middle Ages that provide some details of the nature of ecclesiastical or secular domains in northwest Europe refer to river fishing activities. The rare references made to fishponds appear notably in Charlemagne's capitulary de villis and in the polyptych in the Abbey of Saint-Remi in Reims.

Fig. 1. Main cities mentioned in their geopolitical context at the beginning of the fifteenth century (in black, the borders of present-day Belgium; in light grey, the hydrographic network).



The general evolution of land reclamation in Brabant and Hainaut, in particular wet valley bottoms, perhaps remains to be written about in detail, but the broad lines are known. In the eleventh and twelfth centuries, it was increasingly common for forests and marshes to be left to land-clearers, private individuals or institutions. The dynamics of this reclamation are complex, but it is certain that, with the increase in cultivated land area and cereal production, there were more water-mills, ponds and fishponds. Forests therefore gave way to agriculture and, although the fact is less well explained, to forms of fish farming. Many grain mills from the twelfth and thirteenth centuries along small rivers in these and neighbouring regions were built in connection with retention basins, which served as energy reserves and fishponds.¹¹

Numerous references are made to fishponds mainly in peri-urban territories and in the rural areas developed by ecclesiastical institutions. This was the case in 1136 in Le Roeulx and in 1138 in Houdeng, two villages located about twelve kilometres east of Mons, where the Abbey of Saint-Feuillien created or had an existing fishpond and a mill.¹² Most of the time, even when it was a question of an older infrastructure, a fishpond next to a mill was referred to in the singular. This was the case in the southern part of Brabant near Nivelles, in the villages of Mignault in 1138 and Arquennes in 1182 and 1190,¹³ and in the central part of Brabant. In 1160, in the valley of the Lasne, about twenty kilometres south-east of Brussels, a single fishpond appears to have been built. The fishpond of the mill built before 1229 by the Duke of Brabant in Gempe, about ten kilometres northeast of Leuven, was also on its own.¹⁴ The same was true for the *vivarium ducis* mentioned in 1233 in Anderlecht, as well as for the fishpond and mill created in 1218 in Jette, which are both located in the immediate vicinity of Brussels.¹⁵

Another clue confirms this idea of solitariness and isolation. Until well into the thirteenth century, there was no mention of 'big' fishponds, which suggests the existence of small adjacent fishponds. The 'big fishpond of Renissart' mentioned in 1284 was one of the first,

¹¹ Benoit and Rouillard (2000).

¹² Wymans (1975).

¹³ De Smet (1841).

¹⁴ Coomans (2003).

¹⁵ De Marneffe (1904); de Waha (1979); Deligne (2003).

but references to 'big' fishponds did not become widespread until the fourteenth century.¹⁶

In conclusion, there is nothing to substantiate the idea that in the twelfth century, fishponds were part of true fish-farming structures with cycles lasting several years, even though the term *vivier* confirms that fish were indeed being reared. Certain official documents were more explicit in this regard. Around 1165, Baudouin, Count of Hainaut, agreed with the Abbey of Vicogne on the construction of two mills in Sebourquiau, near Valenciennes, and on the share-out of the fish in the adjoining fishpond. His brother proceeded in the same way in 1187 when he made an agreement with the abbey concerning a fishpond in Sebourg.¹⁷ Once again, in 1210, the Duke of Brabant granted the new Abbey of La Cambre the right to fish in a fishpond located near its walls, connected with a mill which he had had built several years earlier. The purpose of this donation was to provide fish once a week to the refectory and to the invalids in the community. In these official documents, the information concerning a limited or weekly supply pointed to the regular removal of fish rather than to true fishing activities associated with more common fish-farming methods of the fourteenth century. In the same official document from 1210, the duke also granted more than 50 hectares of land, forest and marshes located in Lansrode, southeast of Brussels, stipulating that the nuns could make fishponds there in order to supply fish to the abbey. It is, however, impossible to know whether this actually happened. Until the fourteenth century, references were never made to fishponds in descriptions of the abbey properties. This scenario is similar in every respect to those observed at other abbeys in Brabant and Hainaut, and even in neighbouring regions.¹⁸

The ponds in Brabant and Hainaut, therefore, appear to have been well isolated. They were probably used for fattening selected species without practising intensive fish culture. Does this mean that, in contrast to the regions examined by R. Hoffmann, intensive fish culture based on cycles lasting several years was implemented relatively late in Brabant and Hainaut? On the contrary, the examples of Burgundy, and more so of the bailiwick of La Montagne where most of the ducal ponds were created between 1273 and 1306, or of Forez (Auvergne) where the ponds

¹⁶ Deligne (2003).

¹⁷ Duvivier (1903).

¹⁸ For example, the Cistercian abbey of Morimond located in the French Ardennes. See Rouzeau (2004).

were created during the thirteenth and fourteenth centuries, and even of Sologne (south of the Paris basin and of the Loire), seem to echo the order of events in Brabant and Hainaut.¹⁹ Whatever the case may be, the increase in the number of fish-rearing ponds in the context of the rapid urban growth of principalities in Hainaut and Brabant²⁰ and the implementation and development of this activity deserves further attention.

A new interest: 1250–1380

In a little over a century, between about 1250 and 1380, something appears to have changed regarding the interest in fishponds, as they were created in increasing numbers. Furthermore, fishponds were no longer necessarily associated with a mill. At the beginning of the fourteenth century, the Abbey of La Cambre in the valley of the river Maalbeek, in the immediate vicinity of Brussels, proceeded to acquire several fishponds in the surrounding area. One after another, in 1316 and 1331, the abbey obtained them from the De Coudenberg family in Brussels, before creating an additional fishpond in 1380. Moreover, between 1297 and 1305, it also acquired a series of marshes in Lansrode, the village where the duke had once allowed the creation of fishponds (see the official document from 1210 mentioned above). The abbey transformed these marshes into fishponds, as though something had made the investment attractive, whereas in 1210 it had still seemed too risky. Furthermore, the purchase or acquisition of already existing structures took place more and more frequently. At the beginning of the fourteenth century, the Duke of Brabant bought the rights to the fishpond of Saint-Josseten-Noode—located in the same small valley of the Maalbeek—from private individuals. On this occasion, he agreed to a large outlay, giving 50 pounds of annual rent to the former landholders.

The emergence and establishment of groups of fishponds in Brabant and Hainaut took place at the same time. It began in the second half of the thirteenth century but did not truly expand until a few decades later. For the thirteenth century, along with the Renissart fishponds mentioned

¹⁹ Beck (2004); Mattéoni (2004); Guérin (1960); Richard (1983).

²⁰ Verhulst (1999); Van Uytven (1992); Bruwier (1992); Zylbergeld (1983); Zylbergeld (1987).

above (1284), the Barbet fishponds in Frameries (1278–79) can also be mentioned. References to fishponds abounded in the fourteenth century: Les Loges fishponds, Jettefol fishponds near Braine-le-Comte, and ‘big’ and ‘small’ fishponds along the edge of the same small city.

Something appears to have convinced the princes and abbeys that fishponds had become profitable, and that they deserved to be mentioned in the records in the plural, necessarily associating them with the construction of a mill. It was probably the result of the development of increasingly sophisticated rearing techniques that met a growing demand. It might also have been a consequence of the introduction of the carp, although the earliest explicit textual reference to carp in Brabant and Hainaut dates from 1308.²¹ This fish had characteristics that made it particularly suitable to mass production. Particularly robust and prolific, they could survive out of water for many hours or even several days, as long as they were kept moist (in wet straw for example). That being the case, distances between the place of production and the place of consumption could increase considerably.

Carp farming, with its local and regional variations, required the use of several ponds with distinct functions.²² In principle, a small shallow pond was used for fry production. The mature female and male carp were placed in it to release or fertilise eggs, which developed for six to twelve months. After this initial period, the young fish were transferred to a second bigger pond. At the end of the second year, the carp—referred to as *anteniaux* (in Middle French), *antenois* (in Middle Dutch) or *yearlings* (in Middle English)—were transferred again to a vast pond where they continued to grow to their full size. These successive transfers ensured the best possible environment for the different generations, and therefore the prospect of better productivity. However, for many fish-farming operations in the fourteenth and fifteenth centuries, the functional distinction between the ponds was not as clear as it was in theory; most of the ponds had a mixed purpose, containing different generations of fish. Only the proportions of the generations distinguished the ponds from each other.²³ Mixing ensured that a generation would not disappear entirely in the event that a pond was devastated (an opening

²¹ Pinchart (1884).

²² Regarding the characteristics of carp rearing, see, among others: Berthier (2004); Hoffmann (2000); Deligne (2003); Berthier and Rouillard (1999); Hoffmann (1995³); Hoffmann (1994).

²³ Beck (2004); Mattéoni (2004).

in a dyke, flooding, or the proliferation of predators such as otters or sticklebacks), with stocks remaining in the unaffected ponds.

Apart from occasional angling or net fishing, fishing activities in big ponds were similar to true harvests, taking place during the peaks in the Christian calendar (Ember Days, All Saints' Day, Advent, Lent). The frequency varied according to region, intensiveness and size of the fish-farming activities concerned. In certain regions, they occurred every five years, and in others they took place up to three times a year. The big rearing ponds which, during productive years, provided thousands of carp, were raked using nets or emptied using simple technical mechanisms (sluice gate or locks). In the latter case, the fish farmers placed their receptacles at the exit of the pond to capture the fish being carried away by the emptying, and then simply had to collect the fish which remained in the silt. The emptying of a pond was the occasion to select fish for reproduction and to clean out the pond, which was absolutely essential in order to maintain the appropriate depth. In certain regions, the ponds were dried out at regular intervals, and were used to grow rushes or grasses for one year. This resting period allowed the bottom of the pond to be enriched. These techniques, with their local variations, were common in northern France and the inland principalities of the southern Netherlands. There was therefore a strong resemblance between fish-farming sites; they generally included a dyke which barricaded a valley, and at least three ponds rising in tiers upstream.

In as much as the archival sources are able to provide a more or less exhaustive picture of the creation of fishponds, it would appear that the movement became more widespread during the fourteenth century. Most of the fishing activities on domains in Brabant and Hainaut began at this time, and these were considerable. Each prince, lord and ecclesiastical institution—including urban monasteries—with enough land hastened to develop or acquire fishponds. In Brabant, the duke operated such activities near each of his domains.

The golden age of fish farming (1300–1450): an urban phenomenon

The development of fishponds was not uniform, however. A study conducted on the hydrographic basin of the Senne, one of the fairly small rivers crossing north of Hainaut and Brabant via Brussels, clearly confirms the peri-urban character of fish farming. The fisheries known before 1500 were concentrated mainly in the region of Brussels, which

was located in the middle of the basin, and suddenly disappeared beyond a radius of about ten kilometres. A smaller concentration also existed to the south of the basin, around small cities such as Soignies, Nivelles, Braine-le-Comte and, in particular, Mons. Although the geographical dimension has not been examined in depth in studies on fish farming, this specifically peri-urban setting is probably quite typical. This is presumably the case for Franche-Comté (Jura and Haute Saone) or Forez where fish-farming pond management has been well researched.²⁴

The economic reasons which underlay this choice of location are rather obvious: fish farms were concentrated near their final markets and consumer markets, that is, near cities where there had generally been a considerable growth in the population during the twelfth and thirteenth centuries.²⁵ The urgent necessity to keep fish fresh and alive until they reached their point of sale (usually an urban market) increased transport costs and difficulties, whilst making proximity even more vital.

Princes and abbeyes most likely created their fisheries above all in order to support the economies of their domains, whereas other people invested in them for more commercial reasons. This phenomenon was observed at the end of the thirteenth century. In the vicinity of Brussels, for example, a number of bourgeois belonging to important families in the city owned fishponds or obtained the right to build some, whilst from the beginning of the fourteenth century in Mons and Nivelles, aldermen provided the city and prince with the fish they needed.²⁶ Many authors have underlined the high price of carp and even more so of pike,²⁷ which were often part of gifts offered to key figures whom cities wished to honour, or of dishes served to distinguished guests.²⁸ It was also easy to sell fish produced in an economy whose population abstained from meat on certain days. Furthermore, fishponds offered possibilities for a significant appreciation in value. Consequently, fishponds represented a means to combine the security of a land investment with a promise of substantial income. From this point of view, the investment in fishponds in Brabant and Hainaut may be compared with the investment in peat-land by bourgeois from cities in the county of Flanders.²⁹ Fish farmers

²⁴ Gesser (2004); Mattéoni (2004).

²⁵ Verhulst (1999).

²⁶ Piérard (1971).

²⁷ Dyer (1988).

²⁸ Most of the fish-farming studies are listed in the bibliography.

²⁹ Boone (1996).

were not seen as second-rate merchants, because fish was expensive yet essential. On the contrary, their activity was considered an investment, made in the hope of earning a large income.

The involvement of wealthy families in fish farming was also due to the fact that large sums of money were needed to buy enough land and to build fishponds, a process that required extensive excavation works and the construction of dykes. Furthermore, the ongoing maintenance of infrastructures to ensure that they were watertight and functional used up considerable amounts of money each year. All medieval fish-farming records support this: the maintenance of banks using bundles of sticks or wattles, the cleaning of water drainage ducts, the repair of flow control valves, the cleaning-out of the bottom of fishponds, and fishing itself generated high yearly expenses. Without regular upkeep, fishponds would overflow, silt up and disappear, and lose their productivity within a few years.

Carp in the city

The territorial hold of fish farming was not limited to peri-urban areas; it had made its way into urban territories as well. The opportunity to exploit defensive ditches was soon recognised by urban authorities. In Mons, the practice of renting out ditches for rearing and preserving fish is mentioned in the earliest bookkeeping records (1308);³⁰ in Nivelles it was authorised by the duke in 1366; and one of the rare remaining fragments of medieval bookkeeping records for the city of Brussels (1405) mentions a certain Gerelm Bote, who operated a fish farm in the waters of the city walls.³¹ In this respect, the cities in Hainaut and Brabant were no different from most cities in north-west Europe, both neighbouring (e.g. Lille, Namur)³² or more distant (e.g. Paris):³³ they had found a means of adding extra deniers to community funds, whilst ensuring lower costs for the upkeep of defensive ditches.

The necessity to keep fish alive for as long as possible until it was consumed led to the construction of infrastructures for its preservation in urban centres. Generally referred to as '*sauvoirs*' in Middle French

³⁰ Piérard (1971).

³¹ Dickstein-Bernard (1988).

³² Thomas (1999).

³³ Benoit (2004).

Fig. 2. The ducal 'sauvoirs' found in Brussels during excavations conducted around the Visverkopersstraat/Rue des Poissonniers (Fishsellers Street) located a few hundred metres from the Grote Markt/Grand' Place (1999). These reservoirs were included in the foundations of at least two houses, and received their water supply from near-surface groundwater and from pipes that drew water from the river nearby.



and '*savoren*' in Middle Dutch, these reservoirs were created in or near a river.³⁴ They belonged to private individuals or to ecclesiastical, urban, or princely institutions. In certain cases, they were an integral part of residential architecture.

Although these reservoirs were quite commonly used in fish farming and were sometimes seen until the end of the Ancien Régime, they rarely left traces or vestiges. The '*sauvoirs*' of the Duke of Brabant in Brussels were partially exposed during archaeological excavations carried out a few hundred metres from the Grote Markt/Grand' Place in 1999, but have since disappeared in order to make room for an underground car park. There is textual evidence of their existence since 1356. Each year they contained thousands of carp and hundreds of pike from nearby fishponds until the fish was used in kitchens.

Those who wanted to invest in fish farming were almost obliged to have '*sauvoirs*' in the city. This condition probably favoured the entry into trade of certain well-established owners of urban land in mediaeval city centres, which were often built around a river. In Brussels the Sint-Goriks/Saint-Gery quarter, located on the bends in the river, was one of the oldest districts of the city, as well as being that of the fishmongers. A measurement standard for the authorised size of fishing nets was displayed for a long time on the doors of the Sint-Goriks/Saint-Gery church, on the request of the fishmongers. It was not surprising to see that certain bourgeois living in the district who belonged to old families from Brussels were also in the fishmongers' trade. The use of the term '*piscator*' to describe a member of the De Atrio family—who were well known among thirteenth-century Brussels aldermen—on the occasion of the sharing out of a heritage in Sint-Goriks/Saint-Gery, confirms the importance of the fish economy in the socioeconomic structuring of this central district.³⁵

An open economy: skills and resources

Fish farming also required definite skills in stock management. In order to ensure a regular annual income, fish farmers had to place a large enough stock of young fish in their ponds every year. Disregarding the

³⁴ Thomas (1994); Deligne (2003).

³⁵ Lefèvre and Godding (1993); Deligne (2003).

hazards of the weather, the quantity of young fish placed in the first year determined the amount of fish obtained three years later at the end of a cycle. In order to obtain young fish—the starting point of any possible yield—suitable adult carp needed to be chosen and placed in ideal conditions (heat, food) so that they would spawn as well as possible, releasing or fertilising a maximum number of eggs. When the expected stock was not produced, young fish were transferred from another fish farm if the owner had more than one, in order to balance production as best as possible. Otherwise, the owner had the option of buying young fish from other farms. This also applied to other generations of fish. In the event that a fishpond containing *anteniaux* (yearlings) was devastated, the generation gap had to be filled by taking fish from another pond or by buying a stock from someone else.

Exact assessment, along with the required selection and management skills, led to the appointment of officers who were specialised in fish farms on princely domains.³⁶ In Brabant, there are records of three successive *Maîtres Pêcheurs* or *Vischmeesters* (Fisheries' Masters) in the second half of the fourteenth century and first half of the fifteenth century: Henri Mergaut, Gheert Mergaut and Jan Frissen. In Hainaut, archival sources tell us of Jacquemart Bresin and Oudart le Roux who succeeded each other in this position.³⁷ They supervised the regular maintenance of princely ponds, fishing activities, restocking, transfers, transport and the sale of the 'crop'.

In line with what was observed in many other regions, stock reproduction was very difficult to control.³⁸ During fishing and restocking periods, that is, during the peaks in the Christian calendar (mainly around All Saints' Day and during Advent and Lent), there was a flurry of activity on the roads due to the transport of young fish, yearlings or mature fish. Some were headed for reservoirs, some for kitchens, and others for fishponds in need of restocking. The records for the domains of the Duke of Brabant and the Count of Hainaut, as well as those for abbeys, provide much information on this subject. An abundance of references were made to the purchase of fish for restocking in different parts of the territory from specialised fish farmers.³⁹ These purchases

³⁶ Beck (2004); Mattéoni (2004); Gesser (2004); Balon (1942).

³⁷ Deligne (2003).

³⁸ Mattéoni (2004); Beck (2004).

³⁹ Deligne (2003). The transport of all types of fish is also well documented in the neighbouring county of Namur. See Thomas (1999).

entailed major expenses, especially when buying fish aged one year and older. In certain years there was sometimes a production surplus. The sale of the excess '*kevekeuwes/chièvequeuwes*' and '*gruw*' (two words meaning 'young fish' in Middle French and Middle Dutch), or even fish that were ready for consumption, was therefore a source of income for princes and ecclesiastical institutions. All cities with a fish market—big cities (Brussels and Leuven), medium-sized cities (Mons) and small cities (Halle, Binche and Nivelles)—were visited regularly by princely and ecclesiastical representatives who came to negotiate the purchase of stock or the sale of their production. Consequently, fish farming was an excellent factor in the opening of the domain economy.

This opening was even wider given that the production of princely domains was generally not enough to supply their kitchens. Hundreds of carp and dozens of pike purchased from fish farmers were added to the domains' own supplies. In 1377 in Brabant, along with the 10,000 carp from ducal ponds, 1600 carp and 110 pike were purchased for consumption from four producers in Nivelles, Asse, Holland, and Brussels. The same year, 22,000 young fish and 17,000 yearlings were purchased from the same producers to restock the ducal fishponds. About thirty years later, whilst domain production seems to have fallen, more than 13,330 carp and 80 pike were purchased for consumption from approximately twenty producers in Brabant, at the same time as 25,000 young fish and 13,100 yearlings.⁴⁰ Domain fish farming was therefore not separate from commercial fish farming. Fish farmers—be they bourgeois from the cities or in the service of princes and abbeys—were bound to each other by the necessity to obtain raw material and exchange it for large sums of money.

It is therefore fairly clear why certain merchant families in the cities invested in fish farming. Their earnings were even greater when they were able to establish several fish-farming operations in various parts of the peri-urban territory, in order to lessen the impact of a possible localised catastrophe. Some of them succeeded in having a hand in several branches of food supply for the city and the court by combining the activities of butcher and fishmonger, thus ensuring the sale of all animal products, alternating between meat and fish throughout the year. In Brussels, when fishmongers appeared in texts for the first time

⁴⁰ Archives Générales du Royaume, Chambre des Comptes, inv. no. 2362, f. 112–114 and 2392, f. 60–61.

in 1289, they were explicitly linked to the butchers' trade.⁴¹ This association is quite typical of most mediaeval cities. There is much evidence of this in Paris, Poitiers, Ghent, Lille, in the cities of the Doubs valley (Dôle, Besançon), and in the small city of Vilvoorde in Brabant.⁴²

Some fishmonger-butcher families were 'suppliers' above all else: they supplied raw material to other fish farmers, as well as fish and meat for consumption to the urban market and princely kitchens. Examples of certain families from Brussels illustrate this perfectly. For instance, the Daneels family consisted of butchers since the first half of the fourteenth century and had close connections with the peri-urban countryside, in particular the villages of Boondaal and Watermaal located southeast of the city. They obtained a life annuity on the revenue generated by the ducal forest, were responsible for the transport of wood and coal, and took on the role of *Maitre des Bois* (forest master) for the Duchess of Brabant in 1389. They also invested in the development of fishponds.

The case of Jean Daneels clearly shows how this development was considered an investment possibility. In a short period of time, by the end of the fourteenth century, the property of this Brussels resident included a fishpond and uncultivated land in the region of his family's activities, thanks to the concessions of the Duchess of Brabant. In one of the official documents concerning these acquisitions, there was a clause stipulating that the buyer reserved the right to convert his land into (a) fishpond(s). In the second half of the fourteenth century and the beginning of the fifteenth century, several members of the Daneels family, including several women,⁴³ supplied the kitchens of the Duke of Brabant and the Count of Hainaut with carp and pike, and provided the young fish needed for restocking the ducal fishponds.⁴⁴

The Raedbode family had a similar profile. Some family members were established in the Beenhouwersstraat/Rue des Bouchers (Butchers' street) and had several stalls in the meat market in the fourteenth century. They had dealings with the court and invested in complementary activities,

⁴¹ Deligne, Billen and Kusman (2004).

⁴² Dubrec (1957); Favreau (1968); Van Werveke (1948); Nauwelaers (1941); Theurot (2004).

⁴³ Catherine, the widow of Jean Daneels, provided 575 carp in 1403–1404, and Marie 'Li Dannelle' (probably the French variant of the name Daneels) provided fish for the kitchen of the Count of Hainaut (Archives Générales du Royaume, Chambre des Comptes, 8765, f. 2–3).

⁴⁴ Archives Générales du Royaume, Chambre des Comptes, inv. no. 2392, Compte de Brabant, 1403–1404, f. 60 et idem, 4162, Compte de Bruxelles, 1404–1405, f. 14.

including fish farming. At the beginning of the fifteenth century, along with participating in ducal fishing activities and the restocking of ducal fishponds, and being responsible for the transport of fish on request of the duke's *Maître Pêcheur*, Jean Raedbode supplied the court with dozens of pike—a luxury fish *par excellence*—and hundreds of carp for restocking. He probably had fishponds which allowed him to supply the ducal fish farms, or at the very least, large sums of money invested in the fish-farming economy.

The official document of 1289, which mentioned the butchers and fishmongers from Brussels for the first time, appeared just after the Brabant victory in Woeringen, which enabled the Duke of Brabant to extend his power into the small duchy of Limburg, located on the road between Brabant and Cologne. In the first years following the victory, several urban social groups benefited from the generosity of the duke who probably wanted to show gratitude to those who had openly financed the campaign. Next to the drapers' guild were the fishmongers-butchers, thus showing their level of unity and especially the affluence which some of them enjoyed. Indeed, fish and livestock farming activities were similar in many ways. They both made use of methods that involved medium- or long-term forecasts, and both required sizeable financial assets for the purchase of livestock and land outside the city. The handling of large sums of money was therefore not unfamiliar to fishmongers-butchers, which sometimes allowed them to play a financial role.

In the case of Brussels, from the end of the thirteenth century, several important figures were involved in these three activities at once (fish trade, butchery trade and finances). A certain Henri Vriendeken, for example, not only had a privileged place in the fish market and two stalls in the butchers' market, but was also mentioned among the workers and minters at the Count of Hainaut's mint in Valenciennes. This was not an isolated situation. A few decades later, in 1323, another Brussels resident, Raoul Bote—from a family active at the time in the butchery trade, the fish trade and money exchange—ran the Count of Hainaut's minting workshop for three years.⁴⁵

In fact, several Bote family members had important financial functions in the fourteenth century. Amaury Bote was known as a moneychanger in Brussels in the middle of the fourteenth century, as master

⁴⁵ Deligne, Billen and Kusman (2004).

of the Vilvoorde mint towards 1358–1371, and then as adviser to the Duchess of Brabant and tax officer of Brabant for several weeks at the end of the century. At the beginning of the fifteenth century, a man of the same name, perhaps his son, was known for lending large amounts of money to the duchess and for fish-farming activities, selling hundreds of carp to the domain for consumption and for the restocking of its fishponds. The fish farm in Gempe (near Leuven) was granted to him by the duchess, probably to thank him for agreeing to lend money.⁴⁶

The attempt to monopolise sales on the urban market was also one of the major challenges of the fish trade in the fourteenth and fifteenth centuries. In many cities, this type of economic strategy was evident, especially in the butchery trade,⁴⁷ but was also seen among the fishmongers. In both Ghent and Bruges in the county of Flanders, the fishmongers' trade became hereditary and was limited only to descendants of fishmongers.⁴⁸ In Brabant and Hainaut, the fishmongers' trade was not as limited, but other types of restrictions did exist, notably in Brussels and Leuven. In 1392 and 1431 respectively, the fishmongers in these two cities were able to persuade the Duke of Brabant to agree that those who did not own fishponds and who wished to sell fish on the market would have to pay tax to the guild.⁴⁹ The 1392 Brussels decree was even more restrictive when it was renewed in 1448: those who did not own fishponds were forbidden access to the market.

These observations raise the issue of the social stratification of players on the fish market. Indeed, the fact that the Brussels fishmongers accused private individuals of emptying the rivers of fish through their use of damaging fishing techniques, clearly indicates that the fishmongers' trade was not only made up of owners of fish farms, but also included those who caught fish in rivers.⁵⁰ On the other hand, the 1392 decree did not state that the owners of fishponds had to belong to the guild. It is possible therefore that, along with fish farmers such as the Bote or the Daneels families, who did not necessarily belong to the guild, there were more modest fishmongers for whom fishing and/or fish farming was their only activity. This notion is supported by a Brussels decree

⁴⁶ Archives Générales du Royaume, Chambre des Comptes, inv. no. 4013, f. 2.

⁴⁷ Deligne, Billen & Kusman (2004); Dubrec (1957); Chevalier (1994); Van Werveke (1948).

⁴⁸ Van Werveke (1948).

⁴⁹ Deligne (2003); Van Uytven (1980).

⁵⁰ Deligne (2003).

from 1399, which established statutes for the freshwater fishmongers' guild and underlined the difficulties of the guild faced with the disappearance of fishponds.⁵¹ This no doubt implied that the fishmongers in question were in the habit of buying part of their merchandise from owners of fishponds (such as the Bote or Daneels families).

On the one hand, there were therefore those who owned fishponds, and on the other, fishmongers who sold fish on the market. While the former had succeeded in climbing the social ladder as a result of diversified activities and access to ducal circles, the latter were fishermen/fish farmers and specialised merchants. The latter belonged to the guild and could make a relatively good living depending on the weather and the ecological changes in wetlands. They feared the competition much more than the former. On several occasions, they therefore attempted to monopolise fish sales without being able to exclude the major fish farmers they depended on, who had considerable economic and political influence at the municipal level.

Bygone landscapes

Fish farmers, however, like fishponds, slowly disappeared during the fifteenth century. At the same time, the freshwater fishmongers' trade became so exclusive that there were no more than a dozen families left in the sixteenth century, who passed on the guild from generation to generation, almost until the end of the Ancien Régime. From the beginning of the fifteenth century, something seemed to have influenced people's behaviour once again. The period of transition during which Brabant and Hainaut became part of the Burgundy states (1414 and 1433) coincided approximately with the peak in the leasing of domain fishponds and the disappearance at the same time of the office of *Vischmeester/Maitre Pêcheur* (see above).⁵² It also corresponded with the disappearance of many fishponds, which returned to their natural state of marshland or wet meadow. This phenomenon was particularly evident near certain cities in Hainaut: all of the major fish farms disappeared one after the other, including those located near Mons as well as those in the vicinity of Braine-le-Comte and Soignies.

⁵¹ Des Marez (1904).

⁵² Deligne (2003); Gosseries (1968).

A similar phenomenon was observed at the same time in many other regions. It has been suggested that in England the decline in fishponds was due to the king's need to finance his wars and cut down on luxury expenses. With the court located in London, it was easier to deal with London fishmongers, which also contributed to a loss of interest in fishponds.⁵³ In the first half of the fifteenth century, the princely ponds of Burgundy and Forez were leased or disappeared, and at the same time, the office of *Maître Pêcheur* was terminated. Apart from the changes in princely residences, C. Beck and O. Mattéoni also suggest that this occurrence was due to the high costs of fish farming and maintenance difficulties.⁵⁴ These explanations can be applied to a certain extent to cases in Brabant and Hainaut. For example, the fact that Mons and Leuven were no longer court cities explains in part the disappearance of domain fish farms near these cities in the fifteenth century. However, the disappearance was more generalised because it involved fishponds owned by private individuals. In order to understand this disappearance more fully, it is necessary to consider multiple causes, including a change in supply.

The years 1400–1420 also corresponded with the beginning of a massive influx of salted herring on the inland urban markets. Towards 1400, Flemish fishermen adopted the system of herring barrels, which were used at sea for preserving fish. This technical innovation allowed herring to be exported in large quantities as soon as the fishing boats returned to port. Consequently, towards 1420, herring had become a true export product from Flemish ports and cities.⁵⁵ The evolution of fish fauna remains found during archaeological excavations in the inland city of Namur in the county of the same name (South of Brabant and East of Hainaut), is a perfect example of this phenomenon. Until the fifteenth century, freshwater fish represented more than 90% of the remains which were discovered, but were then replaced by two types of salt water fish: salted herring and, to a lesser extent, dried cod.⁵⁶

Curing herring in barrels presented few problems as regards preservation, whilst allowing large quantities of fish to be transported. Apparently, carp was no match for this mass consumption product. The investment in freshwater fish farming had lost the potential it once had

⁵³ Holt (2000).

⁵⁴ Beck (2004); Mattéoni (2004).

⁵⁵ Sicking (1998); Van Uytven (2002); Van Uytven (1985).

⁵⁶ Van Neer and Ervynck (2004).

just a few decades earlier, and merchants probably began to lose interest. The salt water fish business had become much more attractive. The organisation of guilds at the end of the Middle Ages, which often separated salt water fishmongers from freshwater fishmongers in many cities and regions, substantiates this interpretation. In the case of Brussels, the salt water fishmongers' trade was tied to the prestigious *Nation Notre-Dame* alongside the butchers, whilst the freshwater fishmongers were part of the more modest *Nation Saint-Gilles*. This distinction, in every sense of the word, speaks volumes about the gap that now separated the two guilds. Namur, whose supply of salt water fish came via Mechelen and Leuven, experienced a similar development: butchers maintained close ties with fishmongers who sold herring and other salt water fish, whereas freshwater fishmongers found themselves cut off.⁵⁷

Furthermore, in order to guarantee their income in a scale economy—which was probably the only likely means of reducing operational costs—specialised fishmongers were forced to lease new fishponds and work on a greater number of sites. Once again, this phenomenon was very evident in the Brussels region, where the activity was gradually in the hands of just a few families who ran practically all the fishponds in the region. The members of these families still held offices in ducal institutions, but only as water experts who provided advice regarding conflicts of use or the management of rivers, and no longer as the domain managers or suppliers they had once been.⁵⁸

Fishponds continued to disappear over the next centuries. The new fishponds that were occasionally created in the fifteenth century, such as in Leefdaal near Leuven in 1477,⁵⁹ became very rare. Only the ecclesiastical institutions kept most of their fishponds in roughly the same state they were in at the end of the fourteenth century. Moreover, they often kept special records of their fish farms in their archives, in which the difficulty of maintaining a balance in their activities and ensuring a steady income was plainly clear. From one year to the next, despite painstaking efforts, there was so much variation in the number of fish that it could increase tenfold.

Thus, from the end of the Middle Ages, fish farming in the Brabant and Hainaut countryside slowly dwindled. The disappearance of certain

⁵⁷ Balon (1942); Lelièvre (1868); Van Neer and Eryvynck (2004).

⁵⁸ Deligne (2003).

⁵⁹ Van Uytven (1980).

key consumers (a princely court), the weather and the inherently fragile nature of carp farming, the appearance of herring on the urban markets, and the relative increase in the cost of fish from freshwater fish farming contributed to the disappearance of the most outlying fishponds. Three conditions therefore became essential for operating fish farms: they had to be large, contain many fishponds, and be close to major consumer centres. The late disappearance of a series of fishponds around Brussels is probably due to the fact that it was a court city with a wealthy clientele, and that its size ensured a considerable demand for freshwater fish. This was not the case around smaller cities such as Tienen, Mons, Nivelles, Braine-le-Comte and even Leuven. In the case of Leuven, the convenient transport of herring along the river Dyle from Mechelen was probably another factor that hastened the disappearance of ponds.⁶⁰

In the thirteenth and fourteenth centuries, fish farming in Brabant and Hainaut—mainly of carp—led to profound changes in the streams, especially near cities. Whilst princes and ecclesiastical institutions seized this opportunity to supply their kitchens with fish, merchant families saw fish farming as a land investment providing a significant increase in value, as long as they invested the large sums of money required for upkeep and repairs each year. Hundreds of fishponds were created, to the point where certain streams and rivers were considered ‘saturated’ from the years 1350–1380. This phenomenon was reversed, however, from 1390–1430 due to a combination of factors: the fragile nature of the activity, the appearance of new competitive products on the urban market, and the reorganisation of the princely domain in the Low Countries which had become part of Burgundy. Slowly, the fishponds returned to their initial state of marshland and wet meadow. Only a few court cities with a large enough population retained their peri-urban fishponds, until the industrial revolution, urbanisation and hygienism in the nineteenth century accelerated their disappearance once again. Today, groups of ponds are a rare sight in north-west Europe. Apart from a small number of regions such as Sologne, Dombes and Brenne in France, which were able to sustain their fish-farming activities, the ponds that remain are only remnants of what they once were in the Middle Ages.

⁶⁰ This is not to mention that Mechelen benefited from port fees for fish from the thirteenth to the sixteenth century. Van Uytven (1991).

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CHAPTER TEN

FISH FOR FEAST AND FAST FISH CONSUMPTION IN THE NETHERLANDS IN THE LATE MIDDLE AGES

Petra J.E.M. van Dam

Introduction

In medieval Europe, fish was an important meat substitute. The consumption of fish had special cultural significance. Due to its natural qualities and cultural connotations, fish was well-suited to the pursuit of voluntary asceticism and concentration on spiritual matters during the many fast days prescribed by the Christian Church.

The view of asceticism was apparently dependent on status. The cultural historian Massimo Montanari describes, on the basis of Italian city chronicles, prestigious wedding feasts held during Lent at the end of the fourteenth century. Large, expensive fish were served in sumptuous, richly spiced sauces. On further consideration, it is not surprising that certain types of fish ranked as 'feast fish'. According to Richard Hoffmann, environmental historian and an expert on the medieval fishery, fresh fish, and especially large-sized fish (pike, large trouts, zander) and anadromous fish (salmon, sturgeon), were considered, certainly until 1300, food for the elite in the greater part of Europe. This was because only a few areas were situated directly on well-stocked waters. It was not until the late Middle Ages, with the expansion of long-distance trade in preserved fish and the rise of fish culture, that there was any change in this situation.¹ The great consumption of fish in periods of fasting does not exclude the possibility that fish was also eaten outside those periods, even before fast days had been established by the Church. More information has been made available about early medieval fish consumption of the (as yet unchristianized) Slavic peoples in the north

¹ I like to thank Richard Hoffmann and the editors of this volume for their valuable comments. Translation from the Dutch by Stacey Knecht. Montanari (1994) 86; Hoffmann (2001) 131–166; for fish culture in the southern Netherlands see chapter nine in this volume.

of Eastern Europe. It shows that religious rules were not necessary to make people eat fish.² New research also provides us with a better explanation for the expansion of the herring trade. Written and archeological sources indicate that it was not the consumption of meat restricted by the Church, but the growth of cities and populations, which form the most important explanation for the increase in the demand for fish. This led to an increase in the fish supply, and especially preserved fish such as pickled herring.³

Another point of consideration is: to what extent was fish consumption influenced by ecological factors? Could a large supply of fish also have determined interpretation of the fasting rules? What was the pattern of fish consumption in a coastal region like the Netherlands, where there was an abundance of fish, both freshwater and salt water? The English socio-economical historian A.R. Michell believes that salt water fish was the only accessible source of protein for the masses, especially in the coastal regions. In the Netherlands, there was a great wealth of variety. One can assume that there were large differences in the appreciation of various types of fish, and that this also involved social differences in consumption.

The Dutch fishery historian Y. Ypma notes that current notions of taste and edibility of certain types of fish are of little or no use in determining their commercial value in the past. Tiny freshwater fish, such as ruff, which, in the mid-twentieth century were rarely used for human consumption, were popular food in the Early Modern period. Salmon and sturgeon, on the other hand, also ranked among the more prestigious varieties of fish in the late Middle Ages, if only because of their increasing scarcity. Seal, porpoise, and swordfish were also highly valued 'fish'.⁴ In this article, I will discuss both the cultural and ecological factors pertaining to fish consumption and, wherever possible, the economic aspects. The main question is: who ate what? This raises an important sub-question: to what extent did the availability of certain fish in certain ecosystems determine the social status of the fish on the table? Was rare fish 'luxury fish'? Another question is: how did access to certain ecosystems—inland waterways versus the sea, and the coast versus the interior—influence regional differences in fish consumption?

² Benecke (1987) 238.

³ Lampen (2000) 60–64.

⁴ Michell (1977) 134–184; Ypma (1962) 30–31; Hoffmann (1996) 649.

By way of an introduction, I shall examine the significance and role of fish in periods of austerity imposed by the Church. Extensive studies have already been done on gastronomic culture in the eastern Netherlands (Guelders, Brabant, Limburg).⁵ I have done a sample survey of various archival sources from the western and central Netherlands, particularly Holland and Utrecht, from 1300 to 1600.

Fish-eating in periods of fasting

In the Middle Ages, there were different types of voluntary asceticism in preparation for various Church feasts; there was also diversity among the various societal groups. Voluntary asceticism in the forty-day period before Easter (Lent) was more stringent than on the regular, weekly days of abstinence. On such days, monks and nuns had a more frugal menu than the laity and more days per year with a limited menu. The voluntary asceticism of food, according to the Church, could take two forms: fasting and abstention. Fasting signifies a reduction in the number of meals, usually to one meal a day. Abstention means that certain foods are not eaten at all.⁶

Studies by Johanna Maria van Winter on late-medieval cookbooks and financial accounts originating from the Netherlands have shown that in the practice of daily eating, there were varying degrees of abstinence, as well as various combinations of fasting and abstinence. In the vernacular, the concepts acquired yet another connotation. Abstention meant giving up meat only, while fasting implied a more stringent form of abstinence, which, in addition to meat, also included dairy and eggs.⁷ The attitude towards dairy products, in particular butter, softened in the later Middle Ages. For Germany and Switzerland we know that the pope issued *Butterbriefe* (butter letters) that allowed the eating of butter on days of abstinence. The argument was often that the price of food used in times of fasting, in particular olive oil, was too high. Similar developments may have occurred in other northern European countries, like the Netherlands.⁸

⁵ Van Winter (1981) 338–348; Hupperetz and Van Winter (1995) 24–53, 54–75, 76–101.

⁶ Freeman (1997) 65–83.

⁷ Van Dam and Van Winter (2003) 395; Goudriaan (2003) 440.

⁸ Zapp (1983); Hundsbichler (1984) 228–229.

In some languages, the word 'fasting' has taken on a specific meaning. In Dutch, for example, the forty-day period of Lent (Latin: *Quadragesima*) was (and is) referred to as '*Vasten*', which means 'fasting', even though it actually refers to a period of fasting *and* abstinence. In English, this confusing terminology has never arisen, because the word 'Lent' is used for the forty-day period. Medieval regimes of voluntary asceticism in the Netherlands all had one point in common: it was forbidden to eat meat.

By the end of the Middle Ages, fish-eating in periods of abstinence had become so much a matter of course that the fish appeared in literature and the visual arts as the symbol of Lent. In literature, an unusual constellation of symbols formed the fight between Lent and Carnival, in which meat and meat products as the symbol of Carnival were placed directly opposite fish. According to Montanari, the rhetorical struggle between Carnival and Lent intensified in the late Middle Ages.⁹ It is not sufficiently clear from his research, however, whether this was indeed related to the increase in fish, posited by Montanari, in the consumption pattern during Lent. Another possibility is that the fish motif in the visual arts developed independently.¹⁰

In the late Middle Ages, artists often placed the fight between Lent and Carnival in a bourgeois setting. Perhaps the best-known example of this phenomenon is a painting by Peter Brueghel the Elder (died 1559).¹¹ The fight takes place in a Flemish town and is presented as a confrontation between two processions in the town square. On the left side of the painting, from the inns with the beer barrels out front, comes a procession representing Carnival. An obese man is being pushed along on top of a wine barrel, which is adorned with a large ham. The man bears, as his emblem, a long spit with a pig's head on the end. From the right side, from the church, the Lenten procession approaches. This is a procession of clerics giving alms to cripples, a clear indication that at Lent, abstinence goes hand-in-hand with charity. The Lenten procession is led by an old woman dressed in mourning. As an emblem, she carries two puny herring on a baker's paddle. In the middle of the square, at

⁹ Montanari (1994) 92.

¹⁰ The literary conflict of Carnival and Lent was more widespread and earlier than the visual one, see the war of Carnival and Lent dating from early thirteenth century France, edited in Lozinsky (1933).

¹¹ I have used the version of the painting from the Kunsthistorisches Museum in Vienna, described by Bernard (1908) 96; Glück (1910) 8, 15 and reproduced in Grossmann (1966) plates 6–12; compare: Henisch (1976) 38.

the very centre of the painting, two women are washing large fish at the well. They offer them for sale at a fish stall. To the left of the well is a pig, rooting about in the dirt: a familiar sight in any medieval town, but particularly well-chosen here, as a symbol of the fatty Carnival diet.¹²

A northern-Netherlandish example in the same tradition can be found in a Carnival song. The song is printed in a satirical Shrove Tuesday pamphlet dating from the mid-sixteenth century and originating in the vicinity of Jutfaas, near Utrecht. The carnival song is part of a parody on two celebratory songs, in which the notes on the staff are replaced by various foods. The song at the top of the page is about Carnival. The notes are rendered as fool's caps, roasted meat, poultry, and a variety of fancy drinking vessels. The bottom song, about Lent, shows typical Lenten food, especially fish: flatfish, a stockfish, mussels, an eel, and for the rest, turnips (or swedes), onions, and simple drinking vessels.¹³

For a deeper understanding of the significance of fish in periods of abstinence, it is useful to describe the meaning of fish and the material reasons for abstinence.¹⁴ To begin with, fish had an important allegorical significance. Jesus, at the beginning of the description of his evangelical life, was referred to as the fisherman, and his believers were the fish. Under the influence of the creed contained in the acrostic *Ichthys*, the Greek word for fish, the meaning of fish later shifted to Jesus himself. There are other stories in the Bible in which fish plays an important role and symbolizes the believers 'caught' by Jesus and his apostles, such as the 'miraculous draft of fishes' at the Sea of Tiberias.¹⁵

A second, symbolic motif is that fish is a low-fat foodstuff that is well-suited to the required mental attitude of forbearance and self-discipline. For most people in the medieval subsistence society, a fatty diet was a sign of wealth and abundance. A concrete example is provided by the relatively high costs of pork and the demand for seal fat in the fasting period in the Netherlands.¹⁶ This was also endorsed by

¹² In Holland, women were active in the local fishing trade. This may have had to do partially with the division of labor. Fishing was done by the men, during the night, when many fish become active. When the men went home to rest, the women went to the market. Huizinga (1911) 504. Many women's names appear among the fish mongers in the accounts of the Abbey of Egmond: Haarlem, Rijksarchief in Noordholland (RANH), Egmond, inv. nr. 800 (1499/1500) f. 9v; Pigs were common in towns. Smit (2001) 27.

¹³ Hogenelst and Van Oostrom (1995) 294; Pleij (1983) 253–254.

¹⁴ Montanari (1994) 92; Henisch (1976) 32; Hoffmann (2000) 337.

¹⁵ In the Bible: Marc 6:30–44; John 21:1–14; Matthew 4:17–22.

¹⁶ Delen (2002) 58.

a 'scientific' motive. Leading medieval theologians, such as Thomas of Aquino (thirteenth century) argued that fish was cold-blooded, which promoted the contemplation necessary during the fast. Meat, on the other hand, was 'hot', and thereby stimulated the sex drive. This doctrine dates back to earlier pronouncements by ecclesiastical authorities, such as St. Isidore of Seville and St. Benedictus of Nursia, and was also based on the dietetics of ancient times.

In classifying the animal kingdom, problems arose that were of importance to the compilation of the menu. Essentially, all aquatic animals were classified as fish, but there were certain borderline cases, particularly among aquatic mammals, such as the beaver and seal. In the sixteenth century, the seal was considered Lenten food in the Netherlands. The Scheveningen fish expert Adriaen Coenen, in his *Visboek (Fish Book)* of 1578, classifies the seal with fish, immediately below herring, and writes that he has sent various types of seal to Brussels, Mechelen, and Antwerp, where, particularly at Lent, there was a demand for this delicacy. One of his customers may have been the court of the Catholic William the Silent, Prince of Orange, in Brussels. On a Friday in Lent in 1565, when the English ambassador was his guest of honour, there was seal on the menu.¹⁷

The influence of the availability of fish

An interesting question is whether or not more fish was eaten in coastal regions than in the interior. One indicator could be the number of meatless days per year: did Church rules differ per region depending on proximity to water, or did people simply have different eating habits? The presupposition is that on meatless days, mostly fish would have been eaten, but this is not tenable.

Studies by Van Winter show that in the Netherlands, on the menu on days of abstinence, dairy and eggs played an important role, in addition to fish. In the sixteenth century, the Church in the northern Netherlands was even more tolerant of dairy, particularly butter. Presumably this was related to the fact that the substitute for butter, olive oil, was difficult to obtain in the North, and costly, in contrast to southern Europe. Moreover, with the spread of the pastoral economy in the late Middle

¹⁷ Egmond (1997) 114; Delen (2002) 151.

Ages, the supply of butter increased. At the court of Prince William of Orange, for instance, an average of two and a half times as much butter was consumed on fish days as on meat days. The Dutch custom of serving melted butter with fish has continued to this day.¹⁸

In the Dutch town of Leiden in the sixteenth century, guests at the local hospice ate fish and eggs, alternately, on meatless days.¹⁹ Other sources confirm that eggs functioned as a full-fledged substitute for meat, in addition to fish. The eating and production of eggs deserves further study. A proportion of the eggs probably came from chickens, but egg consumption can also be explained by the great numbers of water and meadow birds found in the western and northern Netherlands, a low-lying, wetland-like region. Thousands of wild swans, geese, ducks, and other wild water-birds were listed annually in the income columns of the accounts of the Count of Holland and other large landowners.²⁰

A difficult issue in the study on regional differences in dietary habits is that the religious rules have not been handed down to us in their entirety. The more inland areas fell under the diocese of Liège, from which the most important document containing the rules for fasting has been preserved: the *Vastenbul* (Episcopal bull for Lent).²¹ The *Vastenbul* was issued in 1288 and remained valid until 1618. It is not known what the rules entailed in the areas along the coast of the North Sea and the Zuiderzee (Groningen, Friesland, Drenthe, Overijssel or Oversticht, Utrecht, Holland, and Zeeland), because the *Vastenbul* of the diocese of Utrecht has not been handed down. It is generally assumed that they were fairly similar to those of the diocese of Liège, but that is hardly satisfactory for our purpose.

Another way to study consumption patterns is to compare cookbooks and the financial accounts of large households. The practice with regard to fasting and abstinence in the Netherlands has recently been explored by, among others, Johanna Maria van Winter, Freya Wolf, Annemarie Speetjens, Maret Zonneveld, Raymond van Uytven, and Marie Ange Delen.²² These studies have shown that in the eastern Netherlands, abstinence for the laity was in effect for the entire forty-day period

¹⁸ Hundsbichler (1984) 229; Van Winter (2002a) 198–200; Hupperetz and Van Winter (1995) 60; Delen (2002) 157.

¹⁹ Ligtenberg (1908) 112.

²⁰ Van der Gouw (1980) 299; Hamaker (1876) 653.

²¹ Habets (1875) 455–456, 464–465; Consgen (1826) 6.

²² Hupperetz and Van Winter (1995); Van Uytven (1998) 151–193; Delen (2002).

before Easter, and for the *vigils* (days preceding the fixed holy days, such as All Saint's Day and the feasts of Mary). In addition, abstinence was required on all Fridays and Saturdays in the regular weeks. From the mid-fifteenth-century financial accounts of the courts of the Duke of Guelders and his family, it is apparent that the Vastenbul of Liège was strictly adhered to. At the ducal court in Venlo, abstinence was practiced on Friday and Saturday and, by a smaller group of people, on Wednesday as well. An example of a fast observed there was Saint Andrew's Eve on 29 November 1468. On the menu were fresh fish and stockfish.²³

In Holland, moreover, Wednesday appears to have been a third weekly day of abstinence, but did that apply to everyone? An early source for the court of the Count of Holland is the court accounts for the years 1358–1361. In a separate section, the *pourvance* (provisions, victuals) is a record of which food has been delivered by which supplier to which section of the court.²⁴ In June 1359, the kitchen prepared salmon several times, on Wednesdays, Fridays and Saturdays.²⁵

Another detailed source, yet covering only a very brief period, is an appendix to the 1516 account of the Regional Water Authorities of Rijnland (*Hoogheemraadschap van Rijnland*) in Holland.²⁶ It concerns an account of what several minor Water Authorities officers ate from day to day, from 10 August to 7 September 1516, during repairs to the Spaarndammer Dike. All costs are noted, but there is no mention of quantities.²⁷ There were three regular days of abstinence per week: no meat was eaten on Wednesday, Friday, or Saturday. On each of these days of abstinence, butter was served and alternately eggs or fish. Within this period was an important holiday: the Assumption of the Blessed Virgin Mary on August 15. The night before, on the vigil, the officials fasted on a simple meal of bread, fish, and herring, without butter.

The practice of weekly abstinence in Holland appears to have been that people refrained three times a week from eating meat: on Wednesday, Friday and Saturday. On these days, fish, eggs, and dairy products (such

²³ Hupperetz and Van Winter (1995) 31; compare: Henisch (1976) 28.

²⁴ De Boer (1997a) 408–436, 492–512, 580–589.

²⁵ De Boer (1997a) 424–425.

²⁶ Account of Claes Wolwijn from 10 August 1515 to 7 September 1515, Leiden, Hoogheemraadschap van Rijnland, account of 1516, oud-archief, inv. nr. 9533, appendix.

²⁷ The Spaarndammer Dike, the dike at the southern coast of the sea arm IJ, ran from Amsterdam to Haarlem. It broke at several places after a storm surge on September 30, 1514, Gottschalk (1975) 375.

as cheese and butter) were eaten. Two additional references support the small selection of archival sources and source studies described above. In the fifteenth-century rule for the laity in the *Spiegel ofte reghel der kersten ghelove* (*Mirror or Rule of the Christian Faith*), Wednesday was a meatless day. Christina Ligtenberg, in her study on poor relief in Leiden, reports that hospice guests in the sixteenth century ate no meat on the three days mentioned above, only fish or eggs.²⁸

The Wednesday observed in Holland as a day of abstinence was supplementary to the Friday and Saturday as prescribed in the *Vastenbul* of Liège. This additional abstinence, however, was also observed by a certain group of people at the court of Guelders, where the Liège bull was in force. What could have been the reason for this practice? Do the sources about three weekly days of abstinence in Holland derive from a unique context, the need to attain something through especially strict abstinence, such as the elevation of one's own virtuousness? Or was it simply natural, with the plentiful availability of fish so near the coast, to eat it as often as possible, certainly on days when moderation was a tradition, even though abstinence from meat was not actually prescribed for the laity? Was the latter also the reason that people at the court of the Counts of Holland ate salmon, when it was in season, on Wednesday?

It is worth noting that in a hospice, people hoped to be cured, and according to Christian doctrine, God's will and mercy were of great importance to this endeavour. On the dike, something comparable occurred: here, too, God's help was needed to ensure the success of the repair project. In the dike ordinances for several projects on the south IJ Dike, repeated reference was made to God's help, along with assurances that the dike workers were faithful churchgoers. On this dike, crosses had also been placed next to sealed holes, possibly to mark places of worship. Perhaps extra-pious behavior was considered a means of winning divine assistance.²⁹

One can roughly estimate the numbers of meatless days a year. If one begins with the abovementioned findings for the Netherlands for all the days in the forty-day period of Lent (six weeks), plus at least two days of abstinence a week (46×2), the total is 132 days a year for the laity.

²⁸ Ligtenberg (1908) 112.

²⁹ Van Dam (1998) 256–259; extensive source text references in: Van Dam (2003) note 51.

There were also various holy days whose regular fast did not fall on a Friday or Saturday, which means we have to add even more days of fasting. For some groups of laity, there was even a third, regular, fixed meatless day per week, so this group ate no meat for at least 178 days a year. This custom was probably more widespread in Holland than in the interior. In short, it is no exaggeration to state that at least forty percent of the days of the year were meatless for the laity in the Netherlands. For clerics, this percentage was considerably higher. Goudriaan has made an attempt to quantify the fast days and days of abstinence, based on the rules of the *Broeders van het Gemene leven* (Brothers of the Common Life).³⁰ The *Broeders* belonged to the *Moderne Devotie* (Modern Devotion), a movement of lay communities originating in the eastern Netherlands in the fourteenth century. Their lifestyle fell somewhere between the regular orders, such as the Cistercian monks who never ate meat, and the ordinary laity. The *Broeders* observed more than 175 meatless days each year.

Although there are indications that coast-dwellers ate less meat than people living in the interior, this does not necessarily mean higher fish consumption: as described above, there were plenty of good meat substitutes available in the Netherlands in the form of eggs and dairy, and this supply would have been even higher along the coast.

Which fish were feast fish?

Differences in social status were expressed in the dietary pattern, even on days of abstinence. How can a historian examine which foods were considered luxury foods, or even prestigious?

Descriptions of feasts are the most accessible. In my introduction, I cited the example of the wedding banquets in Piacenza at the end of the fourteenth century. In Lent, a special menu was customary, in which only fish was served. The meal began with a drink, and a selection of sweets. Then came figs with shelled almonds, followed by large fish in pepper sauce. The following course consisted of rice soup with almond milk, sugar and spices, and salted eel. This was followed by fried pike in vinegar or mustard sauce, served with warm wine and spices. Des-

³⁰ Goudriaan (2003) 440.

sert consisted of nuts and fruits.³¹ This example clearly shows—by the commentary of the chronicler and its place in the story—that the meal and its components were considered prestigious.

With other sources, standards and values pertaining to the social status of the food are less evident. There are no such detailed city chronicles or similarly descriptive, qualitative sources for Northern Europe in the Middle Ages. The English medievalist Chris Dyer has studied financial accounts and taken, as a criterion for prestige, the types of fish that were given as gifts to prominent people and fish that was eaten at meals with prominent guests.³² Judging by such texts, and supplemented with commentaries on ingredients in such sources as cookbooks, we can also look at it from the opposite point of view. When, in a source with little or no context (such as a shopping list or a kitchen account) a group of ingredients appears which are known to be luxury items (such as spices and dried fruits), we can also classify the other ingredients as 'refined' and the consumers as 'well-to-do'. A comparable method is applied among archeologists to the finding of food scraps, such as fish bones and other skeletal remains, recovered in garbage heaps, under kitchen floors, and in cesspits. The status of the house or other artefacts provides the necessary information about the social class of the eaters. If the status of the house is unknown, however, one may conclude, for example in an excavation in which sturgeon remains are found, that one is dealing with a prosperous household.³³

One example that makes clear how careful we must be in the interpretation of sources concerns fish heads. Captain Lambert Gerijtsz, in the Kampen toll account of 1438–1441, declared 450 codfish heads.³⁴ Fish heads, regardless of the type of fish, would seem to belong irrefutably to the diet of extremely poor people. Fish heads are offal or table scraps, good for subordinates and household pets. In excavations of fishing communities in Scandinavia and elsewhere, heaps of fish heads indicate processing of (dried) fish for commercial purposes. The fact that there was a trade in this product, and that fish heads appear in great number in financial accounts, together with luxury fish (like eel), makes one wonder if fish heads, for some eaters, were a delicacy after all.

³¹ Montanari (1994) 86.

³² Dyer (1988) 27–38.

³³ Neer and Ervynck (1996) 157; Ervynck (1999); Ashby (2002) 40–45; De Jong (1997).

³⁴ Smit (1919) 255.

A servant to the bishop of York declared that he knew of no more delicious food than fish heads. To deny himself this food in honor of Saint Barbara was no easy task. But it was obviously a good strategy, because the saint saved him from a watery grave and secured him a Christian burial after his shipwreck.³⁵ This incident is recorded in a collection of miraculous tales that were especially popular among the members of the aforementioned Modern Devotion. Here, as with the Cistercians, an austere diet aided in the pursuit of the perfect life. In this sombre environment, fish heads probably *were* a delicacy. This might explain the recovery of a large quantity of fish-head bones in the cesspit of the Mother Superior in the female cloister of the Third Order in the town of Oldenzaal, near the center of the Modern Devotion movement. The excellent state of the bones led archeologists to assume that they had not been used for soup, but should be regarded as offal.³⁶ This is surprising. It seems to me that a third variation is possible: the fish heads were cooked only briefly, or fried, and eaten, leaving the bones behind, fairly intact. The heap of heads was certainly not a sign of a processing site. We have no reason to assume that these women processed fish for commercial purposes.

The way in which the fish heads were used is of great importance. In a household account from the prominent Benedictine Abbey near Egmond, hundreds of codfish heads are listed. This account concerns a diking project at the end of the fourteenth century. It comprises two separate sections for food purchases: one for the abbot and employers, and one for the dike workers. It is notable that the fish heads appear here in the elite section of the account, in the company of eel, a luxury fish. The explanation of these particular fish heads seems simple: jellied eel. Fish heads were often used for making gelatine.³⁷ The example of the fish heads shows that fish parts, on their own, have little significance as status indicator of a meal. The method of preparation adds an important dimension and ultimately determines the significance of the ingredient. This seems to be less so for whole fish.

³⁵ The Hague, Royal Library, ms. 71 H 6, Voorschriften van het lekebroedershuis van (het klooster van) de reguliere kanunniken in Groenendaal, [Rules of the lay-brothers house of (the monastery of the) regular canons of Groenendaal] 1475, f. 117r–120v; Van Dijk (1999) 235. I owe this reference to Dr. van Dijk—many thanks!

³⁶ Ulrich (2000) 79; Laarman (1999) 59–62.

³⁷ Haarlem, RANH, Egmond, inv. nr. 798 (1388/89) expenses of Jan Boen, 56; compare pike and carp heads in recipe nr. 193 in *De Cocboek* of 1593, website edition>: <http://www.kookhistorie.com>, published edition: Willebrands (2006).

Luxury fish

Which types of fish were considered 'feast fish' in the Netherlands? The most unique fish found in the great rivers was definitely the sturgeon. These fish, which measure 3.5 meters in length and weigh 300–400 kilograms,³⁸ are, as it were, the dinosaurs of the underwater world, accidental 'survivors' from another era. Sturgeons have no scales, but are covered with bony plates; they also have no teeth, but small, fleshy-lipped mouths through which they suck in their food. Although the fish is now best-known for its caviar, the sturgeon was once caught for its flesh, too. Coenen sold small, possibly undersized sturgeons weighing 50 kilograms. He remarks that sturgeon tastes like pork.³⁹ The Count of Holland found the fish worthy enough to be presented, as gifts, to distinguished people. On February 8, 1393, he bestowed two sturgeon, caught in the Gelderse IJssel, on the Lord of Altena. Two sturgeons caught in the Meuse were brought back to his court in The Hague.⁴⁰ They may then have been preserved for the season of Lent. This, in any case, is what happened two centuries later, at the same court. At the end of the sixteenth century, the steward of the Nassau estates in Geertruidenberg had three sturgeons pickled in fifteen small barrels every year and shipped to The Hague.⁴¹ Sturgeon was also eaten at the Nassau court in Breda. There is archeological and written proof to support this fact. On the one hand, there are the skeletal remains of sturgeon, found in the castle garbage chute in a layer dating from 1530–40; on the other hand, there is a specification in the kitchen account of April 1553 for the delivery of two sturgeon. The fifty crawfish delivered along with the sturgeon undoubtedly lent the table a festive appearance.⁴²

Of all the fish that are able to survive in fresh water, pike, eel, salmon and carp were certainly favorites in the Netherlands. Eel and salmon are both migratory fishes. They were caught in rivers and inland waterways.⁴³ In the fifteenth and sixteenth centuries, Dutch towns and cities gave gifts of pike, eel, and salmon to important officials. At a banquet in 1511, for instance, the town of Dordrecht presented the governess with a salmon.

³⁸ Hoffmann (2005) 25. In the Netherlands, the sturgeon became extinct at the beginning of the twentieth century.

³⁹ Cited in: Ypma (1963) 31.

⁴⁰ De Boer (1997b) 40.

⁴¹ Martens (1992) 113.

⁴² De Jong (1997) 121–129: table 4; Delen (2002) 157.

⁴³ On eel fishing and trade: Van Dam (2003b).

The stadholder and other high nobles also received such honours.⁴⁴ Sometimes one can tell by the name of the fish that an exceptionally large specimen was concerned. The *schafteling*, for example, was a large, old eel. In England, clerics and city officials showed their mutual respect by sending each other 'great eels'.⁴⁵ In Gouda it was traditional to offer the Franciscans a banquet on the name day of their patron saint, around October 4. In 1507, this banquet consisted of pike, eel, sea fish, herring, raisins, and spices.⁴⁶ Salmon was also a favorite at the court of Voorne in the fifteenth century. In the east, eel and salmon were less common, but the costly pike and carp were occasionally purchased.

The carp deserves our special attention. In the kitchen account of the court of Guelders are several mentions of carp. Speetjen's study of two fifteenth-century cookbooks shows that 34 percent of the recipes call for fish, mostly carp or pike.⁴⁷ Carp is a cultivated fish. It originates in the Danube basin and was not originally found in Western Europe. From the thirteenth century onwards, carp farming expanded, and carp that had escaped from ponds became feral in the Netherlands.⁴⁸ That is why carp does not appear in sources from the western Netherlands until fairly late, and, I believe, also explains why it was a luxury fish. Carp were still rare. According to the detailed treatises that have been handed down to us about carp farms, pike was often set in the carp ponds as a side crop, to eat the fry. The carp were grouped together in the ponds according to their age, and were kept there until they had grown as large and fat as possible. Did the court of Guelders have its own carp farm, or did they buy carp from another farm? And where might that have been?

In 1991, during excavations, a construction was found under the castle at Venlo that resembled a *leefbak*, a trough of water in which fish could be preserved for a long period of time. That is particularly useful for carp, because they can live for a very long time in low-oxygen

⁴⁴ Haarlem, Streekarchief Kennemerland, stadsarchief Haarlem, inv. Enschede, kast 19–10, f. 193; Damen (2000) 391–404.

⁴⁵ Dyer (1988) 31, 33.

⁴⁶ Gouda, Regionaal Archief, Oud-archief Gouda, inv. nr. 1169, f. 20v; idem 1172, f. 14v, idem 1174, f. 17; compare a similar meal offered to the Franciscans by the town of Dordrecht in 1512, Dordrecht, Gemeentearchief Dordrecht, oud-archief I, inv. nr. 443, f. 123; Tresoriersrekening 1453/54, Haarlem, Streekarchief Kennemerland, stadsarchief Haarlem, inv. Enschede, inv. nr. 19–30, f. 35, 36.

⁴⁷ Hupperetz and Van Winter (1995) 84.

⁴⁸ For carp culture in the southern Netherlands, see Deligne, 'The carp and the city,' in this volume.

water. In this way, people could build up the supply that was necessary for Lent. According to Hoffmann, during Lent, cultured carp were, for the elite in the interior of Europe, the most important fish that was available fresh and in large quantities.⁴⁹ In Holland at the end of the sixteenth century, carp was already wild and widespread. According to Coenen, carp was an important fish and considered in Holland to be the tastiest and most popular of all freshwater fish. It was 'eaten by the rich and luxurious people during their feast meals.'⁵⁰

Among the most popular sea-fish were haddock and cod. In the account year 1395–96, the treasurer of the Count of Holland bought nine wagonloads of cod in Scheveningen, as gifts for various nobles on Shrove Tuesday.⁵¹ The fifteenth-century court of Voorne stocked up on haddock and cods during Lent. In Venlo in 1468, haddock appears as a luxury item.

The menu of the Knights Hospitallers of the Order of St. John in Haarlem, in 1570, is so detailed that a distinction in consumption pattern can be made between holidays and ordinary days on the one hand, and lords and servants on the other.⁵² The first course for the main meal of the lords (not knights, in Haarlem, but priests) on Sundays in Lent offered (salted?) herring and *bokking* (smoked herring), the second course consisted of a choice of cods, perch, pike, salmon, roach, dab, or flounder, with a final course of fried fish or oil cake. On weekdays, fried and boiled eel were eaten, as well as cod, bream, pike, plaice, fried and boiled herring. On Tuesdays, Thursdays and Saturdays, for the servants, there was fried and boiled herring, plaice, roach, and stockfish. The servants never ate large, fresh white fish (cod), or large, fresh, freshwater fish (pike, salmon, bream), but they did eat small, fresh, sea-fish (herring and plaice), small freshwater fish (roach), and stockfish (dried cod). In this list, it is apparent that (fresh) cod, pike and salmon were among the most prestigious fish, eaten only by the privileged few. In Haarlem, bream was also a luxury food. Bream is a typical example of a fish from the muddy peat lands. This is probably

⁴⁹ Extensive on carp culture: Hoffmann (2002). Feral carp probably appeared in the coastal plain of Holland by the end of the 15th century, Haarlem, Rijksarchief Noord-Holland, Rekening van de keuken [Kitchen account of] 1496, Abdij Egmond, inv. nr. 799, f. 15bv.

⁵⁰ door de rijke weelderige luyden in hoore feestmalen gegeten' Coenen, *Visboek*, f. 199, 201, cited in Ypma (1963) 31.

⁵¹ De Boer (1997b) 513.

⁵² Van Winter (2002a) 204–212; Van Winter (1996) 303–318.

why it appears less frequently in the diet or menu of the East. In 1571, carp also appeared on the menu. Carp thrives in comparable circumstances and, at this time, had just become indigenous to Holland, as explained earlier.

What makes a fish 'a feast fish'? In the third course of the wedding banquet in Piacenza, 'large' fish were served: clearly, the size itself gave enough information about its high status. The significance of the size was accentuated by the accompanying sauce, which was highly seasoned with the costly spice pepper. The example of Piacenza shows a general characteristic of prestigious fish that seems to hold true everywhere: large fish are better than small fish. The fish I have listed above are all large—or at least, they can be. Cod and haddock rank among the larger sea-fish; pike, salmon and eel are among the larger freshwater fish. Another example, taken from a completely different context, shows that large fish were very desirable. Cistercian monks, as it happens, were forbidden to eat fish, in particular in the early period, and large fish was a real sin. Apparently a 'test' was done at the Pearly Gates whenever there was any doubt about allowing a monk into Heaven. The monk's stomach was opened, and if there were large fish inside, such as salmon and pike, he could not possibly have been a (good) Cistercian monk.⁵³

'Large' was usually synonymous with 'scarce'. Large fish are at the top of the food chain. In an ecosystem there is a relatively large amount of small fish and few large fish. Moreover, large fish are hard to catch. Big, strong nets or large fixed installations are needed, and often boats, which requires a considerable financial investment and a sophisticated form of organization. This was especially true for salmon, which swim in the main flow of the river, so installations have to be sturdy. Salmon fishing was subject to regal fishing rights.⁵⁴ Fishermen farmed the fishing rights in the great rivers, such as the Maas and the Rhine, from the reigning lords. The fishery was divided into sections. The lords safeguarded the borders and mediated in the event of a conflict. I do not mean to claim that salmon was more expensive per unit of weight than herring—herring fishery required boats, too, and you could buy salmon, per piece,

⁵³ Van Moolenbroek (2003) 424; compare: Van Heisterbach, *Dialogus miraculorum* IV, 79, edited in Strange (1966) I, 246–247; a later version of the story by a contemporary of Jacobus van Vitry (died in 1240) in: Greve (1914) 24–25; he specifies the large fish as pike and salmon.

⁵⁴ Martens (1992) 114–134.

at the fish market—but if you wanted to impress your guests with a whole fish, you had to pay a lot of money.⁵⁵

Did large fish actually taste good? Or, to quote the notable words of Goudriaan, in imitation of Freeman, what position did large fish hold in the ‘hierarchy of experience’?⁵⁶ Taste is strongly determined by culture, and varies per region and through the centuries. Most of the luxury fish mentioned here are still considered tasty today. Prerequisites would seem to be that large fish have bigger (fewer) bones and more (boneless) flesh. They are easier to fillet than small fish and the flesh is often firmer, more similar to meat than that of small fish. Pike and eel are exceptions, however: they are known to be extremely bony. This can be resolved by making soup from the fish and sifting out the bones, or preparing the fish in some other fashion. In the menu of the Knights Hospitallers of St. John, boiled pike is offered as a substitute for other fish, which is fried.⁵⁷ Eel and pike were eaten in a vinegary jelly.⁵⁸ The acidity softened the bones (as with pickled herring); this meant that the fish did not have to be filleted; the bones were simply eaten along with the rest of the fish.⁵⁹

It is possible that medieval people found pike, with its many bones, as troublesome to eat as we do today. Yet in the Middle Ages, some foods were served for the simple reason that their presence on the banquet table was a sign of status; they did not necessarily have to be edible. This was true of peacock, a bird that made a fantastic impression on the table, because it was served in its own plumage, but the meat was considered tough and unsavoury. Likewise, pike made its grand appearance in *entremets*, or ‘subtleties’, ornamental showpiece dishes that were brought to the banquet table between courses as a form of entertainment. An excellent example comes from a famous cookbook written in 1420 by *Maître Chiquart*, head chef to Duke Amadeus of Savoy. It is a recipe for ‘Gilded pike clad as pilgrims’. The pilgrims’ procession was preceded by a lamprey, as pilgrim’s staff.

Possibly this aspect of table culture was *en vogue* at an earlier time in the Netherlands. At the wedding of Catharina of Bavaria, eldest daughter of the Dutch Count Albert of Bavaria, to Edward of Guelders,

⁵⁵ Sicking (2003).

⁵⁶ Goudriaan (2003) 448.

⁵⁷ Van Winter (2002a) 206.

⁵⁸ Janse and Van Winter (2000) 178; Baudet (1904) 92.

⁵⁹ Dijkstra and De Haan (1998) 52, 28; Van Neer and Eryvynck (1996) 155–164.

which took place from 7 to 9 January 1369 in The Hague, sixty sheets of gold leaf, 1,200 pike and one lamprey were purchased. The pikes that did not take part in the pilgrimage probably ended up in vinegar jelly, because there were jellies on the menu—but no pike.⁶⁰ The subtlety was possibly dismantled after the meal and given to the servants, or to the poor. Servants generally ate after the nobles and the distribution of leftovers was common.⁶¹

Serving pike was a visible manifestation of material wealth. Serving several pike was an even more obvious statement, but covering pike with gold leaf as part of a fantastical showpiece was truly a masterful display of status. But why was that considered so amusing, a pike dressed as a pilgrim? There may have been a connotation of contrast. The pike, a creature that survived at the cost of others, played a part in a religious procession. This motif can also be found in the widely known tale of Reynart the Fox. Reynart disguises himself as a pilgrim in order to escape the wrath of the court. To that end, he solemnly accepts the pilgrim's staff and bag from the court chaplain. Then he kills the hare that he has fooled with his disguise and feeds it to his young. The author of the later text editions, probably dating from the fifteenth century, stresses that the hypocrisy of the fox dressed as a pilgrim is so funny that it would make everyone laugh, even the sad at heart.⁶²

The prestige lent to the count's table by the eel also explains why the fish enjoyed the count's special protection. Philip of Burgundy ordered that not a single reed, or any other plant, be removed from the banks of Haarlemmermeer (Lake Haarlem) and the other bodies of water north of the town of Leiden. He claimed that if pike were unable to find enough to eat along the shore, it would swim on to someone else's fishing waters. As a result, Leiden would suffer great losses, because of the decrease in income from leasing out fishing rights on the lake. The lessees of the Leiden fishing rights were the very same people who supplied the pike for the wedding.⁶³ Whether one should deduce from this safety measure that pike was scarce, or was beginning to be so because of habitat alteration, is difficult to say. The same is true for

⁶⁰ Janse and Van Winter (2000) 175, 183.

⁶¹ Harvey (1993) 173.

⁶² Wackers (2002) 141–147, lines 3015–3023.

⁶³ Van Mieris (1759) 701; Janse and Van Winter (2000) 174; Van Kan (1988) 85–87. On the wedding see also: Van Winter (2002).

pike as for all large fish: they are relatively more scarce in an ecosystem than small fish.

Poor people's fish

Which fish were clearly *not* luxurious? Judging from the menu of the servants of the Knights Hospitallers of St. John, smaller fish were part of the normal diet: small sea-fish (herring and plaice) and small freshwater fish (roach). But the only fish the Knights Hospitallers of St. John themselves did not eat was stockfish. There is hardly anything known about the small freshwater fish. Ypma remarks that, in the sixteenth and seventeenth centuries, various types of small freshwater fish were considered a delicacy by the poor. The rather unappetizing ruff, with its large head and spiny fins, was in great demand among the 'poor folk', in Amsterdam, Haarlem and Leiden. Ruff was eaten as an *hors d'oeuvre*.⁶⁴

In all the financial accounts, we find large quantities of preserved herring during Lent. They were bought and consumed by the barrel (500–1,000 herring). The delivery or production system was of great importance. The consumption of herring at the court of Voorne was on the low side, with a mere 100–300 herring a week during Lent in 1456. In Voorne, the herring in the Lenten season had to compete with fresh sea-fish like haddock, smelt, and salmon. The household of the tax collector of Lobith, which consisted of approximately fifteen people, consumed, in a Lenten week in 1427, 500 smoked herring and half a barrel of salted herring.⁶⁵ But herring was also an important fish outside the Lenten season. For the siege of Utrecht, which lasted a month (26 June to 27 July 1345), a huge quantity of fish was shipped in for the troops, both fresh and preserved: 324,500 smoked herring, 11,500 salted herring (twelve barrels), 51,000 salted eels (51 barrels), 10,825 cods, six barrels of haddock and two porpoises. Quantity-wise, herring was definitely in the lead, but in terms of weight, the proportions work out slightly differently. According to De Graaf, the smoked and salted herring amounted to a total of 42,495 kilograms. This was

⁶⁴ Ypma (1962) 31.

⁶⁵ Van Winter (1981) 340, 342; Van Uytven (1998) 165.

exceeded only by the cod, at 64,950 kg; the other types of fish remained far below 10,000 kg.⁶⁶

That herring was the ideal 'fish for the fast' is generally accepted by cultural historians, but the Dutch herring production did not reach its height until the seventeenth century, after the Reformation and the abolition of voluntary asceticism in large portions of Europe. This is an indication that the fish had gained an important place on the daily menu.⁶⁷ This is also in keeping with the thesis of Lampen, mentioned earlier, about the relationship between rising (urban) populations and the increase in fish consumption. According to the dike account of the Regional Water Authorities of Rijnland in 1516, the servants ate herring every Friday. The servants belonged to the urban middle class. Among these servants, for example, were also messengers from the Water Authorities. Gillis Gillisz and Gerrit Jansz van Abbenbrouck lived in the finest neighborhoods of Leiden, on the Breestraat and the Kort Rapenburg. In 1562 Van Abbenbrouck was taxed for a house in Mare-dorp, which he probably rented, and which placed him qua capital at the bottom of the upper 30 percent of the payers of the Leiden *Tiende Penning* tax, together with a barber, a shipmaker, a cabinet maker and a greengrocer.⁶⁸

The Regional Water Authorities of Rijnland gave annual gifts of *tijbokking* to its contacts within the councils of the Habsburg government in Brussels, Mechelen and The Hague.⁶⁹ Tijbokking was smoked herring caught in the IJ, a different sort than the herring caught near Scania on the Baltic Sea and the North Sea. It lived along the coast and in the Zuiderzee and the IJ. The higher one's rank, the more herring one received. The presidents of the various councils and tribunals and the stadhouder of Holland and Zeeland were honored with 1,500 herring, the other noble councilmen received 500–750 herring, and ordinary lawyers and attorneys were given 250 herring. The Knights Hospitallers of St. John also ate herring in various forms: cooked and preserved. All in all, herring does not seem to have been a fish with any particular

⁶⁶ De Graaf (1996) 391. His figures of sizes and weights of fishes are minimum ones. In the past fishes used to be larger: see the works of Van Neer and Ervynck; a tarbot of 90 cm in: Laarman and Lauwerier (1996) 94.

⁶⁷ Unger (1980) 256.

⁶⁸ Noordam (2001) 31 and appendix; for the archival sources see Van Dam (2003) 491, note 80.

⁶⁹ Account of 1550–51, Leiden, Hoogheemraadschap van Rijnland, Oud-archief, inv. nr. 9572, appendix.

status; its significance was comparable, depending on preparation and use, to the abovementioned fish heads. Instead of large, prestigious fish, one could also give gifts of an impressive quantity of smaller fish.

Flatfish like flounder and plaice, were caught on the coast in great quantities. The flatfish fishery was part of the coastal fishery. According to De Vries and Van der Woude, large quantities of fish from the coastal fishery were sold in the fifteenth century by way of the IJssel, via Cologne to the Rhine Region all the way to Basel. In the first half of the sixteenth century, fishermen from the Dutch coastal villages were still transporting such large quantities of dried plaice to the Whitsun Market in Antwerp that they even attracted wholesale buyers from Cologne, Metz, and Strasbourg.⁷⁰ This information comes from the fish treatise of Adriaen Coenen, the fish expert from Scheveningen. He also reported that plaice was caught from February—when the sun had gained enough in strength to dry the fish—until June. All the large villages north of Scheveningen took part in the plaice catch. For the purpose of illustration, Coenen added a map of the coast with the villages in question, and a drawing of the plaice fishermen's boats with their nets hung out, all along the coast. In the Lenten season, hundreds of barrels of fresh plaice were sold daily at the market in Scheveningen. Salted plaice were also sent in barrels and baskets to Cologne, Metz, and especially the region of Gulik and Kleef.⁷¹

Coenen specifically provides a drawing of plaice in two different states: fresh, with the characteristic orange spots, and dried, shrunken and headless, like Norwegian stockfish. He probably assumed that for many of his readers, dried plaice was a more familiar item than fresh. Unique to the plaice was that, every spring, it installed itself in dense masses along the coast, probably to spawn. Coenen quotes fishermen as saying that the mass of fish, in some places, was more than one and a half metres thick, a figure clearly based on soundings.⁷²

In addition to plaice, there was also a great deal of flounder caught in the coastal fishery. The flounder fishermen came mostly from the cities along the Maas, Lek, East and West Schelde estuaries. Flounder is very similar to plaice, but prefers fresher water. The estuaries form the ideal habitat. It is no wonder, then, that the court of Voorne consumed huge

⁷⁰ De Vries and Van der Woude (1995) 241.

⁷¹ Egmond (1997) 119.

⁷² Egmond (1997) 119.

quantities of flounder: 200 to 1,000 fish a week, all year round. The fish arrived in baskets of 100 flounder each. The export of dried flounder was primarily oriented toward the region of Kleef and Gulik.⁷³

The stock of dried plaice and other dried fish, according to a local chronicler, was traditionally stored in Beverwijk.⁷⁴ In illustrations, one occasionally sees wooden drying installations near the coastal villages.⁷⁵ The way in which the flatfish were treated and transported can be seen in children's toys: miniatures of dried flatfish have been handed down in late seventeenth-century dollhouses, tied together at the head with bits of string and hung in the kitchens, like sausages.⁷⁶

Stockfish is depicted in the literature as the least appetizing fish. Huge quantities of stockfish were sold. In 1435, when the court of Guelders was on the march, 78 percent of its purchase of fish consisted of stockfish. The pattern of shipping in a large quantity of stockfish during Lent can also be seen in the account of the tax collector from Lobith (1428–29).⁷⁷ In the Kampen ship toll account, levied in the years 1438–41, Captain Lambert Gerijtsz shipped in 1,100 stockfish.⁷⁸ The import of Norwegian stockfish in the Netherlands was known as far back as the thirteenth century.⁷⁹

The German *Hansa* had control of a large portion of the stockfish trade in Bergen; in the late Middle Ages this shifted from the eastern to the western Hanseatic cities of Bremen and Hamburg and, around 1550, to Amsterdam. Stockfish was made by drying cod in the air, without salt. The fish was hung across racks to dry all along the Norwegian coast, but especially in Nordland, where the climate was most suitable. Stockfish had a storage life of three years.⁸⁰ The Dutch also produced preserved cod, but this was a different type. It was caught in the North Sea and salted right on the boat, and was known as *laberdaan*, or salt fish. This fish would not be of much importance until 1600, according

⁷³ Egmond (1997) plate XII, 118–120.

⁷⁴ Van Venetien and Verwer (1974) 66.

⁷⁵ Frederik Muller, Loterijplaat voor de stichting van een nieuw gasthuis in Egmond aan Zee, Rijksmuseum Amsterdam, FM 1306, in the background, at the right; Keurboek Egmond 1592–1690, Alkmaar, Streekarchief, Gemeentearchief Alkmaar, Egmond aan Zee, inv. nr. 1.

⁷⁶ Pijzel-Domisse (2000) 156.

⁷⁷ Van Winter (1981) 341.

⁷⁸ Smit (1919) 255.

⁷⁹ On the stockfish trade see chapter six in this volume.

⁸⁰ Ubbens (1997) 17, 20.

to Ubbens, although she was thinking primarily of export.⁸¹ I suspect that cod was preserved for local consumption much earlier on the Dutch coast. The wagonloads of cod mentioned above, purchased by the Count of Holland, would almost certainly have been preserved fish.

Conclusion

Two different types of eating regimes can be distinguished. The religious, formal eating regime, with rules imposed by the church, was in force for all classes and ranks. The rules concerned the biological-theological classification of the animals consumed, fish versus four-footed land animals, regardless of the method of preparation. Fish, thanks to its diverse cultural connotations, was the ideal substitute for meat during the days of voluntary asceticism. Clerics had more stringent abstinence regimes than the laity, and this was expressed in (among other things) the number of calendar days with fish on the menu.

The social, informal eating regime differed per socio-economic group and per ecosystem. The rules concerned the level of the species, and even of individuals; large specimens were preferred by the elite. Not all types, however, were by definition luxury or poor people's fish; the method of preparation was equally important, and some fish had a neutral status, such as salted herring, and fish parts, such as codfish heads.

The diversity of the sources consulted shows that the history of medieval gastronomic culture cannot be based solely on literary sources and illustrations. Financial accounts provide information on seasonal variables, which sheds more light on the factor of scarcity. Using bone material, it is also possible to take ecological factors (such as fish stock) into account.

There was an ecologically determined basis to fish consumption. People tended to eat whatever was easiest to obtain in their vicinity. On the coast, this was primarily cod and flatfish. But on days of abstinence, especially during Lent, the demand for fish was too great for the supply and people had to revert to preserved fish, sometimes from afar. Salted and dried herring was to be found on nearly every table. For those of lesser means, stockfish was shipped in from Scandinavia. In addition to stockfish we see, in the sixteenth century, dried flatfish

⁸¹ Ubbens (1997) 21.

on the menu, and some evidence of the preservation of cod from the Dutch fishery exists from the fourteenth century onwards. It is not impossible that trade in such fish was much more widespread before the import of stockfish, especially in the eastern Netherlands and the countries along the Rhine. Sources show that in the fifteenth century, dried plaice was already competing with stockfish, but was still sold abroad until the sixteenth century.

Whether one finds fish in written sources or in excavations, the relationship between the fish in the water and the fish dish on the table is by no means linear or univocal. Factors of importance in reconstructing eating patterns include natural availability. *Which* fish can be found *where*, and where are some fish more scarce, or plentiful, than others? Scarcity can contribute to the social status of a fish. Not only 'type' determines scarcity, but also size. In nature, there is a relative scarcity of large fish, and this seems to have been reflected in the composition of the medieval menu. Only notables could allow themselves large fish. The combination of the two—exotic and large—was to be found on the dining tables of royal courts and elite ecclesiastical orders. Large sea-fish, such as haddock, and large freshwater fish, such as the native pike and salmon or the eastern European carp, were luxury fish.

Fish was eaten for religious reasons, in particular in times of fasting and abstinence, but *when* and *how often* was also determined by material factors. Fish was a meat substitute. The number of meatless days for the laity was over 135 a year in the Netherlands; in Holland, probably even more than 178. In addition to fish, eggs and dairy were customary meat substitutes—foods that, in the wetland environment of the northern and western Netherlands, were undoubtedly available in abundance. Each meatless day did not necessarily mean an extra burden on the natural fish supply. A large proportion of the catch was exported to other countries in Europe that also had a great demand for fish, but little or no fish of their own. In the season of Lent, despite the natural abundance of fish, people still had to resort to preserved fish. Another conclusion is that on the Sundays in Lent, which did not fall under the Lenten regime, certain groups of clerics ate fish nevertheless—festive fish, of course, since the choice of food was a reflection of one's religious, social *and* ecological position. Coastal dwellers in the Netherlands really appreciated fish.

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CHAPTER ELEVEN

'OUR TRIUMPH OF HOLLAND' WAR, VIOLENCE, AND THE HERRING FISHERY OF THE LOW COUNTRIES, C. 1400–1650

Louis Sicking and Adri P. van Vliet

Introduction

'*Our triumph of Holland*', the title chosen for this paper, is taken from Adriaen Coenen's *Visboek* (*Fish Book*) of 1578.¹ According to this fish auctioneer and wreck master in the fishing village of Scheveningen near The Hague, herring was the most important fish and one of the most important products of the Holland economy. Being a Hollander himself, he gave precedence to his own province although he did recognise that the herring fishery was also important for Zeeland and Flanders. By the time Coenen wrote his *Fish Book*, Holland was the unquestionable centre of the Netherlands herring fishery. That had not always been the case.

The expansion of the herring fishery in the late medieval and early modern periods was of utmost importance for the economic development of the Low Countries and, after the Dutch Revolt, for the Dutch Republic. Although historians have paid much attention to this branch of industry, the focus has been limited to and divided between the Flemish fishery of the fourteenth and fifteenth centuries on the one hand, and Holland's fishery of the sixteenth and seventeenth centuries, on the other hand. The historiographical gap between the Netherlands and Belgium, which has been responsible for this division, is detrimental to the understanding of the Low Countries before, during, and after the Dutch Revolt. This paper aims to consider the developments of the herring fisheries in the three maritime provinces, Flanders, Zeeland and Holland, in a comparative perspective. Attention will be focused on the

¹ This paper is a revised version of "'Our triumph of Holland". War, Violence and the Herring Fishery of the Low Countries, 15th–17th centuries', held at the 6th conference of the North Atlantic Fishery History Association, 12–17 September 2001 in Qaqortoq, Greenland. Egmond (2005) and Egmond (1997) 109.

Fig. 1. Number of herring ships in the Netherlands.

	1476	1562	1600	1635
Flanders	125	100	?	?
Zeeland	150	200	160	100
Holland	100	400	500	600

Sources: Sicking (1998) 76–79. Van Vliet (2003) 29; Van Vliet (1996) 244.

influence of war and violence on the regional developments of the herring fishery. This is believed to be of crucial importance in explaining the shift of the main centre of the herring fishery from the south to the north of the Low Countries, and the later decline of the industry.

By the mid-fifteenth century the herring fleets of the three Netherlands provinces—Flanders, Zeeland and Holland—had established a near total ascendancy over the North Sea herring fishery. Whereas in 1476 Flanders and Zeeland represented the major part of the Burgundian-Habsburg Netherlands herring fleet, in 1562 Holland alone possessed the majority of the herring busses. Yet, although the Flemish share of the fishery decreased during the course of the sixteenth century in favour of the rapidly growing fisheries in Holland and Zeeland, this branch remained of great economic importance to Flanders. Estimates of the number of herring ships in the Low Countries differ greatly.² The most recently used figures are presented in figure 1.

From the beginning of the sixteenth century Holland would dominate the Dutch and even the entire European herring fishery for most of the first half of the seventeenth century.

During the fifteenth, sixteenth and seventeenth centuries, the herring fishermen suffered due to various wars, especially conflicts between the Habsburgs and the Valois (1521–1559), and between Spain (including the royal Netherlands) and the Dutch Republic (1568–1648). Firstly, the developments of the fifteenth century, when three methods to protect the herring fishery against violent attacks came into being, will be discussed. This will be followed by a look at the consequences of the Habsburg-Valois wars for the herring fishery. The last part of this article will analyze how the start and the subsequent phases of the so-called Dutch Revolt or Eighty Years' War (1568–1648) affected the Dutch fishery. The violence and insecurity resulting from the Revolt had an enormous impact on

² Sicking (2004) 138–139; Van Vliet (1996).

the entire Dutch fishery. After 1583, fights between the royalist Flemish and the rebels from Holland and Zeeland created major interferences with and inflicted enormous damage on the fishery.

The fifteenth century: three ways to protect the herring fishery

Since the herring fishery became more and more important for the economies of Flanders, Zeeland and Holland, measures were taken to protect the industry against war and violence. There were three ways to guarantee the safety of the fishery. The first way was a fishing truce, in French *treve pescheresse*, in Dutch *stilsate*. The first known fishing truce in which a Netherlandish county was involved was a treaty negotiated in 1406 between Flanders and England. It gave Flemish fishermen a guarantee of safety while working in English waters. The signing of such a treaty makes clear that at that time the central government considered the herring fishery of Flanders important enough to deserve its diplomatic support.

Unfortunately, in spite of the fishing truce of 1406, the English and Flemish continued to attack each other's fishermen.³ The trouble began when Philip the Bold, Duke of Burgundy (1364–1404), became Count of Flanders in 1384. As son, brother, and uncle of the French kings (Jean II (1350–1364), Charles V (1364–1380), and Charles VI (1380–1422)) he supported his relatives in the Hundred Years War against England. Relations remained tense until 1420 when Philip the Good of Burgundy (1419–1467) turned his back on France and chose England as his new ally. In 1435 Philip broke the treaty with England, and restored peace with France, where Jeanne d'Arc had turned the fortunes of war in favour of her country. The break between Burgundy and England was of short duration; after difficult negotiations, a treaty was concluded at the end of September 1439.

The text of 1439, guaranteeing a secure fishery, was the same as that of 1406. The truce included England, Ireland, and Calais, on the one hand, and Brabant and Flanders, on the other hand.⁴ The fishing truce was prolonged for five years in December 1439, and was renewed in 1460 during the Wars of the Roses. Why Holland and Zeeland were

³ Degryse (1948) 2–3; Paviot (1995) 205.

⁴ Paviot (1995) 206.

not included is unclear, for the two counties were formally added to the Burgundian territories in 1433.

The second way to guarantee a safe fishery was the exchange of safe-conducts. Belligerent parties could exchange safe-conducts or passports. Fishermen left their harbour with a passport of the enemy so that if they met a warship of the enemy at sea, they could show the passport and would be left alone. Although we may doubt whether such measures could be effective, contemporaries, fishermen included, took these measures very seriously. In 1439 the Flemish coastal towns took the initiative to obtain safe-conducts from England. They had pressed the Four Members of Flanders⁵ to send a delegation to Calais, but the mission was unsuccessful. Instead, the above-mentioned general fishing truce was concluded. In the years 1442–1444 the English king Henry VI delivered safe-conducts to the Flemish fishermen, but English warships and pirates continued to threaten the fishery. At the same time, the Duke of Burgundy intermediated between England and France.⁶ When diplomatic circumstances improved but violence at sea continued, the delivery of safe-conducts could have a positive impact on the safety of the fishery.

The third way to safeguard the fishery was by convoy ships. In 1438 the Flemish town of Dunkirk equipped convoy ships because of the tensions that had arisen with England after the siege of Calais by Philip the Good in 1436. Shortly before the fishing truce with England had been concluded in 1439, fishermen in Zeeland and Holland had decided to equip convoy ships to protect their herring busses.⁷ The reason for this may have been that they were not included in the truce. It was probably the first time that these two counties used convoying to guarantee the herring fishery.⁸ The background for this equipment was the war between Holland, Zeeland, and the Wendish towns of the Hanseatic League in 1438–1441. In total, twelve convoy ships were put to sea. Zeeland, together with the island of Voorne, where the main herring town of Brielle was located, had to equip six busses and a hulk. In Holland, four busses and a hulk had to be prepared for war and convoy.

⁵ Representative body of Ghent, Ypres, Bruges and the so-called *Vrije* of Bruges, the surrounding countryside of Bruges being a distinct and powerful jurisdiction.

⁶ Degryse (1969–1970) 5–6.

⁷ Degryse (1948) 5; Paviot (1995) 207.

⁸ Degryse (1974) 67.

This is a clear indication that Zeeland's herring fishery at the time was more important than Holland's.

The organisation of the convoy fleet of 1439 was an experiment that turned out to be more expensive than expected because the captains of the ships did not limit their activities to defending the herring fleet. They blocked Flemish ports in the Zwin estuary and attacked Flemish fishermen, despite the fact that Holland, Zeeland, and Flanders had shared the same ruler since 1433. These actions were probably motivated by lust for booty. It is possible that they were also meant to bring a blow to Hanseatic shipping to and from Bruges and to the Flemish herring fishery.

In spite of these problems, representatives from the fishing ports of Holland, Zeeland and Flanders met in the 1440s to discuss the protection of their herring fishery together. In 1445 the three counties equipped convoy ships at the same time. The Court of Holland announced that the Flemish were friends and brothers. The only dissident in this almost joint armament was Dunkirk, which refused to pay its part, although its fishermen took advantage of the convoy.⁹

The end of the Hundred Years' War brought some years of peaceful fishing. The start of the Wars of the Roses in England (1455–1485) generated new discussions amongst the fishing towns in 1457. Holland and Zeeland as well as Flanders, equipped convoy ships in 1457 and 1458, although no interregional co-operation took place. In 1457, as in 1445, Dunkirk withdrew from the plan to equip a convoy ship with Nieuwpoort and Ostend, while the latter towns finally equipped one together.¹⁰

New problems arose with the succession of Philip the Good by his son Charles the Bold (1467–1477), a personal enemy of the French king Louis XI (1461–1483), who was well aware of the importance of the herring fishery for the economy of the Burgundian maritime provinces. During his entire reign the French king tried to damage the herring fishery as much as possible. In 1471 Charles the Bold requested the Four Members of Flanders to ask the coastal towns to equip five war ships, and four ships were equipped. In 1472 the French captured about eighteen herring busses near Norwich, which caused Dunkirk, Nieuwpoort, and Ostend to equip three convoy ships in 1474. In 1475

⁹ Paviot (1995) 207.

¹⁰ Paviot (1995) 208; Degryse (1948) 7; Degryse (1951) 117–128.

no convoy ship was equipped, perhaps because the duke had equipped a general war fleet. The fleet did not prevent the French from capturing fourteen or more herring busses, mostly from Ostend.¹¹ Meanwhile, Charles died in 1477 at Nancy. His daughter and heir, Mary of Burgundy (1477–1482), had to fight a war with France, which lasted until after her death in 1482, when her husband Maximilian of Austria concluded peace. Between 1477 and 1482 convoys were organised in Holland, Zeeland, and in Flanders by the fishing towns in co-operation with the respective provincial authorities.¹² There are no signs, however, of interprovincial co-operation.

The dukes of Burgundy did not ignore the importance of the herring fishery for the economies of the Low Countries. However, they did not involve themselves in its protection. The fishing towns or the provincial authorities decided whether convoy ships were equipped. Only after such decisions had been taken on the local or provincial level would the duke give his official approval.¹³ This may explain why the three counties, while sharing the same ruler, did not co-operate seriously to protect each other's herring fisheries. In the fifteenth century there was no pressure from the central government for such co-operation. Due to differences in the start of the season and differences in location, Holland, Zeeland and Flanders continued to protect their own herring fisheries.

The preferred method of protection was convoying, especially following the accession of Louis XI to the French throne, who was determined to damage the economy of the Low Countries. According to the American historian F. Lane, the protection costs for the herring fishery rose as a consequence of the French threat.¹⁴ The other two means to guarantee safe fishing, fishing truces and the exchange of safe conducts, were mainly applied in co-operation with England which, like the Netherlands, had an important stake in the herring fishery. This may explain why these cheaper methods of protection were chosen in relation to England. They may have been less effective than the protection by convoy, but the mere fact that both sides had an interest in obeying the truces and the safe-conducts may have had a positive outcome.

¹¹ Paviot (1995) 211.

¹² Degryse (1948) 8–9; Degryse (1963) 36–38; Paviot (1995) 211–212.

¹³ Paviot (1995) 212.

¹⁴ Lane (1979).

*Political support for the defence of the herring fishery:
Flanders and Holland compared*

In the sixteenth century, the three maritime towns of Flanders—Dunkirk, Nieuwpoort and Ostend—formed a closely connected interest group that sought support from the provincial authorities in Flanders and the central government of the Netherlands for the protection of the herring fishery in years of war and conflict.¹⁵ Already in the fifteenth century the Flemish fishing towns had co-operated to defend their interests, although at least until the reign of Charles the Bold Dunkirk often held an independent position.¹⁶

As was the case in Flanders, the fishing towns in Holland also sought the protection of the herring fishery with or without the support of the States of Holland. In the fifteenth century Brielle, the leading fishing town of Holland until 1477, seems to have played a major role in initiating meetings for the fishing towns and villages to protect their common interests. Unfortunately, the available sources do not make it possible to study the development of Holland's fishing lobby. Continuous series of accounts of the fishing towns over a longer period have not been preserved. But in the future, it may perhaps be possible to reconstruct the development of the protection of Holland's fishing interests through a combination of sources scattered throughout the Low Countries.¹⁷ In any case, by 1477 the States of Holland seem to have taken over the initiative to discuss the defence of the herring fishermen from Holland.

Thanks to more abundant sources, we know more about the sixteenth century. The balance of power in the States of Holland then determined provincial support for the protection of the fishery. Out of a total of seven votes, six votes in the States were in the hands of the towns, while the nobility had one vote.¹⁸ Only Delft, through its outport Delfshaven, had a direct interest in the herring fishery. Gouda, Haarlem, and Leiden, the

¹⁵ For a detailed reconstruction of the Flemish fishing lobby between 1485 and 1559, based on 146 surviving municipal accounts; see Sicking (2003a).

¹⁶ Blockmans (1978); Degryse (1969–1970) 13–14.

¹⁷ The publication of the sources concerning the *dagvaarten* or meetings held by representatives of the States and towns of Holland by the Institute for Netherlands History in The Hague are of great importance for that undertaking. *Bronnen voor de geschiedenis der dagvaarten van de Staten en steden van Holland vóór 1544*.

¹⁸ Letter of Mary of Hungary to Louis van Schore, president of the Privy Council, (1th?) April 1543, Algemeen Rijksarchief (General State Archives) Brussels [hereafter ARA Brussels], Council of State and Audience (hereafter Audience) 1642/3A f. 21; Tracy (1993) 258; Koopmans (1990) 73.

three towns without maritime interests, were always against payments for the protection of the fishery. Only with the support of Dordrecht and Amsterdam, both with considerable maritime interests, and that of the nobility, could such payments be forced. In such cases the States did not equip their own convoy ships but participated in financing the convoy ships equipped by the fishing towns.¹⁹ The division of the States of Holland between representatives with and without maritime interests is comparable with those of the Members of Flanders of which Bruges, and the *Vrije* of Bruges, had greater interests in the protection of the herring fishery than did Ghent and Ypres.

Nevertheless, the situation of Holland differed in several respects from that of Flanders. In the first place, Holland was further removed from the Habsburgs' arch-enemy, France. Flemish fishermen had a greater risk of being captured near their harbours by French privateers than the fishermen from Holland. Captures near the coast were most frequent, since the returning busses were full of herring and thus an attractive prey.²⁰ The main fishing ports from Holland (Rotterdam, Delfshaven, Schiedam, Enkhuizen and Vlaardingen) were not only further away; they were also located further inland than the three main fishing ports of Flanders: Dunkirk, Nieuwpoort and Ostend. Since the Hollanders fished more and more up north, they were probably less bothered by French attacks than their Flemish colleagues.²¹ All these factors will have contributed to Holland's lead in the herring fishery. Because of the relatively safe location of their ports, Hollanders were less prepared to spend money on the equipment of convoy ships than Flanders was. The fact that Holland did not have a fleet of the States is not only due to the balance of power in the States of Holland but is also a consequence of the above-mentioned geographical factors. As a result, the central government was faced with the curious paradox that

¹⁹ Tracy (1993) 258; Tracy (1990) 90–92.

²⁰ 'Les ennemiz espians semblable temps et conjecturans qu' ilz ne pevent faillir de trouver sur les costes des pays par deça aucunes desd. buysses retournant de la mer et chargés d'harengs'. Memorial of De Schepper and Maximilian of Burgundy, 26 April 1553. ARA Brussels, Audience, 1578B f. 12r. 'Avoir regard... ausd. buisses a leur retour auquel gist le plus grand dangier d'estre prins par ce que les pyrates et ennemis les aiment mieulx prendre chargez de harencqs que wuydes et sont aussi ainsi chargé de moindre deffence'. Letter of Cornelis de Schepper to Mary of Hungary, 9 September 1551, ARA Brussels, Audience. 1665/1 f. 303v.

²¹ Boelmans Kranenburg (1976) 294; Boelmans Kranenburg (1968) 463; Van Uytven (1979) 141.

the province with the greatest herring fleet was least prepared to take protective measures.²²

*Holland and the defence of the herring fishery during the
Habsburg-Valois wars*

Before the start of the first Habsburg-Valois war in 1521, the fishermen from Holland were rarely hindered by war or violence, especially if the Zuiderzee is left out of consideration. Warships were fitted out in 1491 and 1507. These had both an offensive as well as a defensive task: fighting privateers and protection of the fishermen. In 1491 Holland sent sixteen ships to sea against Philip of Cleves and his privateers from Sluis. In 1507 two ships were used against Jan Kaproen, who probably acted as a privateer for the duchy of Guelders, ally of France. In both cases, fishermen were not willing to pay for the ships.²³ Apparently they doubted whether the fishery could be protected effectively by ships whose task was not limited to convoying alone.

At the initiative of the central government of the Netherlands, Holland equipped six convoy ships for the protection of the herring fishery in 1522. The towns of Dordrecht, Delft, Rotterdam, Schiedam, Vlaardingén and Goedereede were involved in the enterprise. In the name of the sovereign Charles V, Anthony of Lalaing, stadholder or governor of Holland, appointed a commander of the fleet. In Flanders, the admiral of the Netherlands was responsible for such nominations, but the authorities of Holland did not recognise him. At the advice of the first four towns mentioned above, the commander chose the captains of the individual ships.²⁴ Together with six Flemish and three convoy ships from Zeeland, the ships from Holland contributed to the common defence of the English and Netherlandish herring fishery. This common defence took place within the framework of an alliance that Emperor Charles V and King Henry VIII of England concluded against France.²⁵

²² Tracy (1993) 255.

²³ Meilink (1922) 318–319, 323–324, 328; Bijl (1951) 19–22, 152–158; Ward (2001) 212–213.

²⁴ National Archives The Hague [hereafter NA The Hague], Archives States of Holland [hereafter ASH], 2413 f. 44–45; NA The Hague, Archives Court of Holland [hereafter ACH] 26 f. 250r–v; Meilink (1922) 357; Bijl (1951) 158.

²⁵ Sicking (1995) 193, n. 26.

The States of Holland agreed with the levying of a special tax (*omslag*) as a contribution to finance the six ships. The remaining costs would have to be fully covered by levying *lastgeld*, that is, a tax per *last* of herring. If the yields in 1522 would not be enough, then during the next season *lastgeld* would have to be levied again.²⁶ The States demanded *lastgeld* from the fishermen since they were the ones who took advantage of the convoy ships. The fishing towns were prepared to levy *lastgeld* if the States contributed to the costs as well. In that way the States recognised that the protection of the fishery was in the interest of the whole province. Holland's solidarity however left much to be desired. The 'continental' towns of Gouda, Haarlem and Leiden, with no stake in the seafaring trades, had not only voted in the States against the special tax for the ships but also refused to pay their part.²⁷

Besides the financing, the effectiveness of the convoy ships was a subject of discussion. When the regent of the Netherlands, Margaret of Austria, asked Holland in 1524 to equip five convoy ships in order to protect the herring fishery, together with six Flemish ships and three ships from Zeeland, the States of Holland turned down the request. Because of the limited advantages of earlier convoying, the States were of the opinion that it would be better if the herring busses would put to sea at their own risk. Moreover, ship owners and fishermen would have been sensitive to the fact that these expensive defence measures, of doubtful effectiveness, would diminish their profits.²⁸ In 1533, when the protection of the herring fishery was again discussed in the States of Holland, the expensive and ineffective convoying of 1522 was remembered.²⁹

A new war with France in 1536 forced the Hollanders again to convoy their herring fleet. Reluctantly the States approved a tax (*omslag*) of 6.000 pounds to contribute to the costs of the convoy ships. Again, a few towns refused to pay their share. As a consequence, the ships had to return after a month only. The ships anchored in the mouth of the Maas to wait until the money for the prolongation of the expedition would be collected. Finally the whole undertaking cost 18,000 pounds more

²⁶ NA The Hague, ASH 2413 f. 44–45; Bijl (1951) 158; Häpke (1913) 118; Tracy (1993) 258.

²⁷ Tracy (1990) 92.

²⁸ Tracy (1993) 257–258; Tracy (1990) 92. For a quantitative case-study on the influence of protection costs on the profits of the herring fishery, see Sicking (2003b).

²⁹ Häpke (1913) 117–118.

than the approved 6,000 pounds. After this financial debacle, the Hollanders were more convinced than ever that an affordable and effective safeguarding of the herring fishery by convoy ships was impossible.³⁰ In these circumstances the exchange of safe-conducts with France could be an attractive, and cheap alternative.

Significantly, in 1536, in separate declarations, Charles V and Francis I agreed to tolerate the fishery of each other's subjects for the duration of the war. These two 'general' safe-conducts became operative for individual fishermen when they put out to sea with 'particular' safe-conducts. To this end, the admirals of France and the Netherlands exchanged such passports. However, the stadholder and the States of Holland who claimed to be competent for the maritime affairs of their province did not recognise the authority of the Netherlandish admiral, Adolph of Burgundy. They had already equipped the convoy ships mentioned before and refused the distribution of safe-conducts by the admiral amongst the fishermen. In addition to the formal objection against the admiral's authority, the stadholder and the States complained that fishermen had to pay for the passports according to the number of men on board (1 lb and 10s or 30 stuivers per head on board). The regent, Mary of Hungary, supported Holland and declared on 2 October 1536 that the fishermen did not have to pay for the passports. It would cause an unacceptable burden for Holland, which already had to finance the convoy ships.³¹ The next day Mary sent someone to the admiral to get the general safe-conduct. It was handed over to the States of Holland who published it before the end of the same month.³² With copies of this general safe-conduct the fishermen put out to sea. Both the herring fishermen and the provincial authorities of Holland were satisfied with this solution.

Problems arose again the following year with the deliverance of safe-conducts. The admiral sold them to fishermen from Zeeland and Flanders but the Hollanders were not allowed to do so. The stadholder and the States considered this a violation of their old privileges of free fishery. Mary of Hungary induced the admiral to deliver safe-conduct to

³⁰ Tracy (1990) 92–93; Tracy (1993) 259–260.

³¹ Document of Mary of Hungary concerning the safe-conducts, 2 October 1536, NA The Hague, ASH, 92 (with 2413).

³² Letter of Mary of Hungary to Adolph of Burgundy, 3 October 1536 and extract from a memorial book of the Court of Holland, ARA Brussels, Audience, 2413 f. 65 and 71, Memorial on the safe-conducts, 1538, NA The Hague, ACH, 2411 f. 1v.

be distributed by the authorities from Holland, but this time he refused to comply. Since it was forbidden to put to sea without safe-conduct, the herring busses lay unemployed in the harbour. Many fishermen did not want to take the risk of being captured at sea. By his refusal to deliver safe-conducts, the admiral caused the regent great embarrassment, since she already had promised 600 safe-conducts to the fishermen from Holland.³³

The Court of Holland complained to the stadholder, accusing the admiral of being weak-willed, as he gave safe-conducts to those who wanted to pay for them.³⁴ The alternative of equipping convoy ships was too expensive and time-consuming. The Court referred to the high costs of the convoying of 1536, which had not yet all been paid. The fishermen who did obtain safe-conducts from the admiral would not be willing to pay the *lastgeld* for the convoy ships. Those fishermen who did not possess such safe-conducts would certainly capture French fishermen, regardless of whether or not they had safe-conducts from the Netherlandish Admiralty. As a consequence, all Flemish and Zeelandish fishermen with French safe-conducts risked being taken by the French. This would be the end of the whole system of safe-conducts. Therefore, the Court concluded, it was absolutely necessary that the fishermen from Holland obtained safe-conducts from the admiral. This would be the fastest way to start the season and would cost only half of the amount that would have to be paid for convoy ships. The court feared that, without this solution, there would be no hope for the herring fishery of 1537.³⁵

At the first instance, the stadholder insisted on equipping warships as long as the admiral was not prepared to deliver safe-conducts to the authorities of Holland. A few towns refused to pay for these ships because they already had acquired safe-conducts from the admiral. It is clear that both the stadholder and the admiral were more interested in their own powers than in the interest of the fishermen.³⁶ Finally, the admiral succeeded in receiving 25 stuivers (1 lb 5s) for each safe-

³³ Memorial, 1538, NA The Hague, ACH, 2411 f. 1v–5v.; Häpke, *Akten*, I, 335, 338. Aert and Adriaan van der Goes (1791) I part 2, 545–547; Letters of Anthony of Lalaing to Mary of Hungary, 12, 17 and 25 June 1537, ARA Brussels, Audience, 128 f. 47–48, 51, 55 ().

³⁴ NA The Hague, ASH, 2411 f. 5v.

³⁵ Häpke (1913) 338–339.

³⁶ For the conflicts on jurisdictions between the stadholder of Holland and the admiral of the Netherlands, see Sicking (2004) 105–121, 165–176.

conduct he sold to the Hollanders. The town of Schiedam, with a fleet of 36 herring busses, paid him 850 guilders,³⁷ and both the fishermen and the admiral were satisfied. The fishermen paid less money for their safety than an expensive convoy would have cost, and the admiral had been able to sell his safe-conducts to the Hollanders. Perhaps only the stadholder had reason to complain, although Mary of Hungary had declared that this incident would not infringe upon the privileges of Holland.³⁸ The stadholder did not have to fear a further violation of his authority. Moreover, at the end of July, Charles V and Francis I concluded a truce for ten months. Hence the herring fishery could continue without further trouble.

The conflict of jurisdiction between the stadholder of Holland and the admiral led to new problems during the next Habsburg-Valois war (1542–1544), when the herring fishery again needed protection. In August 1542 admiral Maximilian of Burgundy, who had succeeded his father after his death in 1540, together with his Admiralty made a proposal for the equipment of no less than thirty warships. Flanders and Holland would have to deliver twelve ships each, Zeeland six. The ships would have to be in service from September till December, and would have to be financed with a *lastgeld* of at least three pounds. When the admiral had reached agreement with the States of Zeeland on his proposal, he approached the States of the two other provinces.³⁹

The States of Holland that met on 24 August reacted negatively to the admiral's plan. The herring season had already started, therefore the States thought it was too late to equip convoy ships. Moreover, they did not recognize the admiral, but only their stadholder, René of Chalon, prince of Orange. As captain-general, and in the name of the regent, the stadholder had distributed letters of marque amongst the fishermen from Holland.⁴⁰ The protection of the herring fishery during the season of 1542 was limited to the arming of the herring busses. With permission of the stadholder, the fishermen could either fish for herring or hunt for French, Danish or Norwegian ships with whom the emperor was at war. The situation of the Netherlands was indeed very difficult

³⁷ Van der Goes (1791) I part 2, 554 (30 June 1537); Häpke (1913) 339, n. 2.

³⁸ Memorial, 1538, NA The Hague, ASH, 2411 f. 6.

³⁹ Proposal of the admiral and his Admiralty, 13th August 1542, NA The Hague, ASH, 2416. The plan had the approval of the regent. Letter of Mary of Hungary to Maximilian of Burgundy, 20th August 1542, ARA Brussels, Audience, 130 f. 214.

⁴⁰ Van der Goes, (1791) 668–668 (17–18th August 1542); Häpke (1913) 388.

in 1542. The French attacked the country from the south, the Guelders from the east and the Danish at sea from the west. All possible means for defence, the herring busses included, were put into service.⁴¹

In May 1543, representatives of the three provinces met in Brussels with the central government, including the admiral, to discuss the safety of the herring fishery of the new season. The representatives were in favour of a fishery truce, according to which the belligerent parties would leave each other's fishermen unmolested. However, because of the extremely difficult diplomatic situation, Mary of Hungary thought that a fishery truce would be impossible. When the admiral suggested exchanging safe-conducts, the representatives from Delft, Rotterdam, Schiedam and Brielle referred to the bad experiences of 1537. According to the Hollanders, the equipment of warships was of no use, either. Even when a hundred warships would be equipped, the fishermen would not be safe, since 'the sea is great and wide', they reasoned. Finally, the representatives returned home with nothing achieved.

They did, however, bring home plans to discuss. The idea was to equip between ten and twenty warships that had to accompany the total herring fleet of Holland, Zeeland and Flanders. Holland took the same stand by stating that it was impossible to protect the fishermen. Referring to the positive experiences of 1542, the States of Holland proposed to arm the herring busses to resist the French. That was what happened in Holland during the season of 1543. By order of the stadholder, the sheriff of Delft controlled whether the herring busses were sufficiently armed.⁴²

At the beginning of the 1540s, the Hollanders were still sceptical about convoying the herring fleet. They were of the opinion that the limited security offered by the convoy ships did not justify the high costs. Furthermore, the refusal to recognise the admiral was an obstacle for inter-provincial co-operation for the defence of the herring fishery. Because of a relative safe location, the small power base of the fishing interests in the States, and a clear eye for profit margins and competition, the fishing towns of Holland were less motivated to equip convoy ships than their Flemish counterparts. The few times that the Hollanders did equip convoy ships, in 1522 and 1536, for example, showed them that effective

⁴¹ Letters of marque by the stadholder, NA The Hague, ACH, Memorial books 31 f. 129r.-138v.

⁴² Document of 30 July 1543, NA The Hague, ASH, 2416; NA The Hague, ACH, Memorial books 31 f. 182v.-183.

protection of the fishery was impossible with a convoy. The provincial authorities and the fishermen were equally ill prepared to organise convoys. It must be added, however, that the States gave priority to the interests of maritime commerce represented above all by Amsterdam. The decision to equip warships was usually determined by commercial interests, not by fishing interests. The deliverance of safe-conducts by the admiral was a different story. The fishermen considered these to be a cheap and attractive alternative for convoying. For reasons of power and the privilege of the free fishery, the stadholder and the States of Holland did not want the fishermen to accept the safe-conducts. In this particular case, the provincial authorities were more concerned for their powers and authority than for the safety of their fishermen.

In 1547, admiral Maximilian of Burgundy became governor of Holland, and thus could also exercise his powers in this province. More definite policies concerning the protection of the Low Countries herring fishery now seemed possible. In the years between 1547 and 1558, before the start of the herring season, the central government, the admiral and the commissioner of the fleet, Cornelis de Schepper, undertook initiatives to co-ordinate the defence of the fishery in Holland, Zeeland and Flanders. In 1550 and 1551 there was a move to raise a central collection of *lastgeld*—a tax on herring—to fund an 'official' escort of the herring fishing vessels by warships of Charles V. However, because of resistance of the centralised collection and the disappointing proceeds of the tax, the financing of the escorts remained a local matter organised by the provinces and the maritime towns. The outcome was that neither the central government nor the admiral gained real control over the business of the protection of the fishery.

After the conclusion of the peace of Câteau-Cambrésis with France in 1559, the fishermen of the Low Countries faced a new threat, this time from England, where Elizabeth I funded the harassment of Netherlandish shipping and fishery by English privateers. Each season, discussions took place amongst the fishing towns, but because of rising disunity among the towns and the absence of support from the central government, no decisive results were reached until the start of the Dutch Revolt.⁴³

⁴³ Degryse (1948) 19–20; Degryse (1953) 49.

War, violence, and the herring fishery during the Dutch Revolt

In the spring of 1568, William of Orange decided to take up arms against the Spanish king and sovereign lord of the Netherlands, Philip II, and became the leader of what is now known as the Dutch Revolt or Eighty Years' War (1568–1648). This civil war eventually split the seventeen provinces of the Habsburg Netherlands in two: the royal Netherlands remaining loyal to the authority of King Philip II in the south, and the Dutch Republic created by the rebels joining William of Orange in the north. William's rebellion resulted in the invasion of the Habsburg Netherlands by three enemy armies. The only rebel army able to maintain itself was the one under the command of William's brother, Louis of Nassau. While at Groningen (in the north of the Netherlands), Louis managed to provision and protect his troops by using a naval squadron under the command of Jan Abels. The captains of this squadron each received a letter of consignment for the capture of any ship belonging to a Netherlandish subject. The formation of this squadron of privateers marks the birth of the Sea Beggars, which can be considered as a maritime counterpart of the rebels. These impoverished noblemen, farmers and fishermen from all over the Low Countries acted as privateers with commissions from William of Orange or Louis of Nassau.

Once it became clear that the military operations of William of Orange on land would fail, the number of Sea Beggars increased. They infested the seas, causing great damage to the mercantile marine and fishery of subjects who remained loyal to Philip II. The fishery of the Low Countries was heavily hit by the actions of the Sea Beggars. At the end of the nineteenth century the Flemish historian, E. Vlietinck, described this as follows: 'Only the sea knows how many casualties she has swallowed up, which have been thrown overboard as lifeless boulders by the Sea Beggars.'⁴⁴ Some Sea Beggars bragged to a captured fisherman from Ostend that they had, '...taken some fishermen the other day, bound them to a piece of wood and left them floating alive on the waves of the sea.' Over the six-year period, from 1566 to 1572, the Dunkirk fishing fleet shrunk from 120 to 30 ships.⁴⁵ In the same time, 29 fishing boats were captured in Zeeland. The Maasmond-section

⁴⁴ Vlietinck (1897) 192.

⁴⁵ Accounts of the lastgeld, 1572, Municipal Archive Dunkirk [hereafter MA Dunkirk], OA, 245 no. 4; Lemaire (1927) 98.

Fig. 2. Number of captured fishing boats by the Sea Beggars (1569–1572).

Area	Number of Ships
Flanders	31
Zeeland	29
Holland	21

Sources: ARA Brussels, Audience, 285, 339; Groninger Archieven, Charters ten hove, I, nr. 133; MA Schouwen-Duiveland, OA Brouwershaven, 4348; MA Schouwen-Duiveland, OA Zierikzee, 95; Zeeuws Archief, OA Veere, 403–404; MA Vlissingen, OA, 245/505; Koninklijke Bibliotheek (National Library) [hereafter KB] The Hague, Collectie Vogels, 69D13 and 69D16; Piot (1874) 375, 434, 472, 507; De Meij (1972) 300; De Swalue (1846) 28; Vlietinck (1897) 192; Van Vloten (1858) I, 169.

of the Dutch herring fleet suffered great losses as well, because many ships were lost during battles near the harbors of Brielle, Maassluis, and Vlaardingen from 1572–1574.⁴⁶

Many fishermen no longer dared to sail to the fishing areas near England and Scotland. Compelled by necessity, they restricted themselves to catching fresh herring near the coasts of Flanders, Zeeland and Holland.⁴⁷ Yet the actual damage to the fishing fleet turned out to be less than expected, as can be seen in figure 2. One should take into account that the herring fleet of Holland was greater than the ones of Flanders and Zeeland combined, so that proportionally Flanders and Zeeland suffered more than Holland. In fact, the Sea Beggars preferred to concentrate on the rich merchant marine fleet. The fisheries' greatest toll was in human suffering and the enormous economic consequences of sailing prohibitions.

The governor general of Philip II in the Low Countries, Fernando Alvarez de Toledo, Duke of Alva, took few counter measures in his battle against the Sea Beggars. He chose to use defensive measures that had proven successful in the 1540s and 1550s during the wars and conflicts with France and Scotland. These measures included convoying, protecting the coastal areas with admiralty ships, and adding incidental fleet equipment. The organization of maritime affairs remained unchanged.

Despite pressure from the central government, the three provinces did not succeed in launching joint convoys in 1568 and 1569. Only in 1570 did they agree about division and financing. Alva, that is the central government, provided three war ships, Holland also provided

⁴⁶ Kranenburg (1946) 29–31.

⁴⁷ Vlietinck (1897) 192.

three ships and Zeeland and Flanders one each. After the end of the herring season, convoys were used in an offensive manner to fight the Sea Beggars. In 1571, after many quarrels, Flanders, Zeeland and Holland were able to launch a number of fishing convoys. The convoys, however, could not prevent the herring ships from being chased away from the fishing areas by the Sea Beggars in November 1571.⁴⁸

The armament regulations, which the central government at Brussels had issued for the fishing boats, could not in reality be met. The costs were too high, and the boats were too small to carry artillery.⁴⁹ Guards were installed on church steeples and along the beaches. The most important harbours had soldiers billeted, which created numerous problems between the local population and the garrisons. Many people preferred to equip warships against the Sea Beggars rather than to have soldiers in their city. Beginning in the spring of 1571 the Sea Beggars actually plundered coastal towns. This occurred less in Zeeland and Flanders because Alva had paid more attention to coastal defenses there than in Holland. In spite of all the problems, the government at Brussels did not equip a war fleet 'to sweep the ocean clean'.⁵⁰

After the rebels conquered large parts of Zeeland and Holland in 1572, the Sea Beggars were reorganized into a regular navy. From that moment on, they were no longer a threat to the fishermen from Holland and Zeeland, which had now chosen the side of the Dutch Revolt. It was different, however, for the royalist Flemish. The Flemish sea towns annually equipped several convoys for each herring season. Regardless of this, many fishing boats fell victim to the rebels. They were waylaid in particular out of Flushing.⁵¹

The situation for the Flemish fishermen changed drastically when Dunkirk, Nieuwpoort and Gravelines fell to the rebels in October 1576. The admiral of Zeeland, William Blois van Treslong, became the new governor of Dunkirk. He immediately equipped four warships to protect the Flemish coast.⁵² The rebels from the north again changed from

⁴⁸ ARA Brussels, Audience, 336 (16 August 1570), 339 (7 July, 8 November 1571); KB The Hague, Collectie Vogels, 69D13 (July 1570); De Meij (1972) 196–201.

⁴⁹ ARA Brussels Audience, 334 (September 1569); KB The Hague, Collectie Vogels, 69D13 (8 April 1570).

⁵⁰ De Meij (1972) 130–142, 310–312; KB The Hague, Collectie Vogels, 69D16 (12 and 30 April 1571).

⁵¹ ARA Brussels, Archives of the Exchequer, 37396 (4 September 1573), 37697 (24 August 1574 and fol. 55v.), 37698 (fol. 13v.–14).

⁵² Dumon (1989), 362–378; Lemaire (1927) 102–109.

enemies into competitors, and the fishery received new opportunities. Representatives from Flanders, Zeeland and Holland again mutually discussed fishery affairs. No longer were safety measures the only theme, for now the quality and supply of fish were also on the agenda.⁵³

The Spanish recapture of the Flemish coastal area, including the harbour cities of Dunkirk, Gravelines, Nieuwpoort in 1583 and Ostend in 1604, caused Flanders once again to be separated from Zeeland and Holland, this time for good. The Spanish administration did little to protect the Flemish fishery. Other interests prevailed, including equipping of privateers and a royal squadron. The Flemish fishery was made subordinate to the war at sea. Fishermen were pressured to serve in the Flemish war fleet, or they were confronted with sailing prohibitions and other restrictions. This of course had severe consequences for the Flemish fishery, and helps to explain its decline.

The Spanish government invested a lot of energy in destroying the fisheries of Holland and Zeeland on the recommendation of several advisers, who viewed the fishery as one of the most important economic pillars of Zeeland and Holland. As the Spaniard, Juan de Idiaquez, Marque of Velada agreed in 1602 'It would be very appropriate to reinforce the armada of Dunkirk in order to deprive the enemy of the herring fisheries. This could be achieved at relatively little cost compared to the damage it might cause. Fishing is the major support for most of the Dutch communities, and is therefore a way in which great influence can be exerted on those who rule them.'⁵⁴ It was clear to the Spanish conquerors that, with a little manpower and a few ships, enormous damage could be inflicted to the fishery of Holland and Zeeland. These included export restrictions, commercial embargoes, and attacks on the rebel fishing fleets in their own harbours. The capture of the Flemish coastal area offered the Spanish king the opportunity to strike at the Zeeland and Holland fishery by using privateers. An admiralty was established, giving privateers a lawful framework within which to operate. By July of 1583 the first privateers went to sea. During the Dutch Revolt increasingly more privateers were at sea, with the number of vessels varying from ten to almost one hundred ships.

At the order of King Philip II, Alva's successor, Alexander Farnese, Duke of Parma, equipped ten warships at Dunkirk. A new navy

⁵³ Vlietinck (1897) 219–222.

⁵⁴ Quoted by Stradling (1992) 13.

Fig. 3. Number of captured fishing boats from Holland and Zeeland (1585–1648).

	1585–1607	1621–1648	Total
Zeeland	256	250	506
Holland			
Northern Holland	77	224	301
Southern Holland	182	707	889
Total	515	1181	1696

Sources: ARA Brussels, Admiralty, 59; Van Grol (1936) 128–130; Pollentier (1972) 9–11; Van Vliet (1994) 67–70, 184–188. For the number of captured Zeelandish fishing boats see Van Vliet (2003) 133–134.

developed, the royal squadron, which was used to combat the Netherlands rebels at sea. The Flemish war fleet, which consisted of both the privateers and the royal squadron, became the principal Spanish weapon against the rebels of the North. This tactic enjoyed more success. In some years, hundreds of fishermen from Holland and Zeeland were captured and taken to the Flemish harbours.

The Maasmond area of the southern part of Holland lost by far the most fishermen. Further research into the area of northern Holland will likely lead to still higher numbers. It is clear from these existing figures, however, that the enormous rise in captured ships from Southern Holland dealt a severe blow to the herring fishery of this region.

By implementing export restrictions and proclaiming commercial embargoes, the Spanish government tried to disrupt the rebel economy in Holland and Zeeland. Borders were completely or partially closed on a regular basis. As soon as the rebel army began an offensive in the south, the government at Brussels imposed a very heavy duty or ban on the import of foodstuffs, including herring and other fish. Consequently the fish on the wharves rotted, herring and fish prices increased enormously in the southern Netherlands (Antwerp), and people began smuggling fish. During the periods of large-scale export restrictions, English merchants funnelled herring and other fish through the neutral ports of Dover and Calais into the southern Netherlands at very high profits. This was very difficult for herring merchants in Holland and Zeeland.⁵⁵

⁵⁵ Israel (1980) 478–479.

The sea fisheries of Holland and Zeeland also had to deal with the consequences of trade embargoes. This was especially true during the 1620s, when the sea fishery suffered enormous losses because Spanish salt was no longer available. Salt was indispensable for the preservation of fish. As salt prices rose and salt became a scarce commodity, less fish could be preserved. Spanish salt was of a high quality and approved for use. It was difficult to replace it with an alternative like French Brouage salt, for example. It took the *College van de Grote Visserij* (Council of the Great Fisheries), responsible among other things for the regulation of the herring fisheries and for the protection of the herring fleet at sea, a long time to finally agree to the use of non-Spanish salt. In the meantime, herring and other fish rotted and the merchants were faced with high claims. At the same time, the important trade with the Baltic was in a crisis. Salt and herring were the pillars for this trade. The salt export disappeared largely due to the embargo, and the herring export decreased due to the lack of sufficient salt.⁵⁶

There were continuous rumours of upcoming enemy attacks in the Zeeland fishing towns and also those in Holland, which sometimes proved to be true. The harbours of the fishing towns were easy targets, since they were easily reached from the sea and for the most part badly protected. Ships from the Flemish war fleet operated in Zeeland waters, in the Maasmond area and on the Zuiderzee. The fishing town of Zierikzee was the first town to be captured and held for a short time by the Spanish troops after a spectacular amphibious operation in 1575. At the same time, Brouwershaven, situated a few kilometres away, was totally destroyed. Only a small part of the fishing fleet escaped to the Maasmond area. This event led to the improvement, expansion or construction of fortifications in practically all of the larger fishing towns like Flushing. Guards were installed on church steeples and along the shore areas. The Zeeland fishing towns remained the most vulnerable, however. The Spanish could attack in a short time from their bases in Flanders and Brabant.

Time after time actions were prepared only to be cancelled at the last minute. This was caused by treason, lack of money, bad weather or other unforeseen events.⁵⁷ In 1636, for example, an attack on Flushing

⁵⁶ NA The Hague, College Grote Visserij, 18; Israel (1986) 203–204, 214–217; Israel (1990) 56–59, 136–138; Kernkamp (1931) 158, 227–228.

⁵⁷ See Van Vliet (2003) 91–130.

was prevented due to treason. The Frenchman La Motte, captain of a Zeeland pirate ship, consulted with the Dunkirk admiralty and planned an attack on Flushing. His plan was to enter Flushing with 'captured' ships. In reality these would be Dunkirk warships. La Motte's squadron was forced to put into the port of Ostend by warships of the Dutch Republic under the command of Johan Evertsen. One of La Motte's crewmen deserted and revealed his captain's plan. When this was discovered by La Motte, he changed his plans.⁵⁸ Until the peace treaty of 1648, the governments of Zeeland and Holland had to stay alert for this type of attack from the sea.

The rebels, however, were equally active. Flemish fishermen were virtually prevented from doing their work. During the fishing season a rebel blockade fleet made sailing very difficult. Every now and then, the crew of the blockade fleet went to the Flemish coastal towns and plundered the possessions of farmers and fishermen. Everything from cows to fishing sloops were then captured. Along the coast and at sea, warships from Holland and Zeeland chased Flemish fishermen. There was hardly any respite. Regularly, Flemish fishermen were captured to obtain information about what ships were in the Flemish harbours. For example, the well-known lieutenant-admiral Maarten Harpertsz Tromp took three young fishermen captive to learn from them whether his shelling of the centre of Dunkirk had been effective.⁵⁹

Immediately after the capture of the Flemish coastal area (1583), the States of Zeeland ordered their lieutenant-admiral Adriaan Cornelissen to pick up as many Dunkirk and Nieuwpoort fishermen as possible, and bring them to the Zeeland harbours for trial or to exchange them for Zeeland and Holland fishermen.⁶⁰ Admiral Tromp was instructed to start chasing Flemish fishermen, and to seize them, together with their boats and nets. At the end of the Dutch Revolt, the States-General, under pressure from public opinion, ordered the equipping of special ships with low depth requirements.⁶¹ Their primary task was to pick up as many Flemish fishermen as possible, along the Flemish coastline. For every officer caught they could count on one hundred guilders, and for each crew member fifty guilders. The States-General were hoping to thus

⁵⁸ Van der Aa (1848) 787–788.

⁵⁹ Van Vliet (1994) 237; Van Vliet (2004) 301–316.

⁶⁰ Van Grol (1936) 133.

⁶¹ Van Vliet (1994) 201–202.

Fig. 4. Number of captured Flemish fishing boats (1583–1648).

	1583–1609	1621–1648
Dunkirk	42	11
Nieuwpoort	17	14
Blankenberge	5	
Other places	21	31
Total	85	56

Sources: ARA Brussels, Admiralty, 200; NA The Hague, Admiralty, 437, 2447–2449, 2454, 2460–2462, 2465; NA The Hague, States General, 4895, 5489, 5532, 5538, 9306; Zeeuws Archief, States of Zeeland, 929, 1197, 1219, 1594.

prevent raids on the Dutch fishing fleet.⁶² In view of this, many Flemish fishermen stopped fishing in their own area. They migrated to France or to the Dutch Republic. In Zeeland, especially, they were received with open arms. Veere and Flushing were popular local destinations.

However, a small group of Flemish fishermen continued fishing, even though they were faced with all the aforementioned dangers. They constantly risked being captured by privateers from Zeeland or by other rebel warships. In figure 4 we can see the number of registered losses, although the total number of losses was probably much higher.

Holland and Zeeland tried to protect their fishery as much as possible against the Flemish war fleet, by equipping fishing convoys. They equipped an average of twenty-five convoy ships for fishing annually, but the effectiveness of the convoys was disappointing. Convoys were no match for the squadrons of Flemish privateers. Efficient protection of the sea fishery was not really possible given the vastness of the catch areas.

The armament of the fishing boats was not effective, either. As soon as the nets were cast, the fishing boats were very vulnerable. If danger threatened, the safest course of action was to cut the nets loose and sail away. It made little sense to resist the heavily armed and manned Flemish warships.

⁶² Zeeuws Archief, Minutes States of Zeeland, 29 May 1623.

Fig. 5. Survey of raids on the fishing fleet of Holland and Zeeland, 1625–1645.

Year	Losses	Number	Location of Privateers
1625	84	12	Scotland
1626	18	5	North Sea
1627	14	5	Shetlands
1632	5	6	Scotland
1632	28	?	Shetlands
1635	124	20	Shetlands
1637	36	13	Shetlands
1645	6	7	North Sea

Source: Baetens (1976) 48–76; Israel (1986) 191–192, 196, 264–266, 328–329.

Conclusion

As we have seen, already in the fifteenth century the parties involved in the herring fishery were standing up for their interests. The fact that Flanders, Zeeland and Holland had the same sovereign, and therefore the same enemies, did not necessarily lead to inter-regional co-operation to safeguard the herring fishery of the three maritime provinces. On the regional level, discussions took place amongst the fishing towns. In Flanders, Nieuwpoort and Ostend took the lead, later joined by Dunkirk. These three maritime towns of Flanders were to represent the fishing interests of the whole of maritime Flanders, the smaller fishing towns and villages included. In Holland, Brielle, being the leading fishing town of the county until 1477, took the initiative and organised meetings where the protection of the herring fishery was discussed. It was probably during the reign of Charles the Bold that the States of Holland took over the role as the main forum for discussion on the defence of the herring fishery in that province. Since Delft was the only town with fishing interests represented in the States, trading interests had priority over fishery.

Since most herring busses were captured near the coast on their return when they were loaded with herring, different visions emerged in Flanders and Holland with regard to the organisation of convoys for the herring fleet. In Flanders, located closest to the enemy, the maritime towns clung to their old tradition of equipping their own convoy ships. They were convinced that this best served their own interests.

In Holland, being further removed from the French main enemy, and thus safer, people were less convinced of the effectiveness of such ships. Besides, the fishermen from Holland had the alternative of arming their busses, which was impossible for their Flemish colleagues, whose busses were too small. All in all, Holland was much less prepared to equip convoy ships than Flanders. In other words, Flanders, which had to equip special convoy ships, had higher protection costs than Holland, which only had to arm its busses. Since Holland represented the greater part of the herring fishery in the Netherlands, this region had a decisive voice concerning the organisation of joint escorts. The outcome was that organised inter-regional escorts were quite rare. A joint or supra-regional command over Holland's, Zeeland's and Flanders' convoy-ships proved to be the maximum attainable degree of co-ordination.

Another conclusion is that Holland came to dominate the herring fishery of the Low Countries before the start of the Dutch revolt. Due to the factors mentioned above, the Habsburg-Valois wars between 1521 and 1559 led or at least added to the decline of the Flemish herring fishery, and to a stagnation of the Zeeland herring fishery, whereas the Holland herring fishery seems to have succeeded in taking advantage of the difficult circumstances created by the wars. The fact that Holland had lower protection costs than Flanders and Zeeland is believed to be of crucial importance for the explanation of this development. Therefore, the statement of Adriaen Coenen cited at the beginning of this article is no exaggeration. The Holland herring fishery was indeed triumphant, within the Low Countries at least.

These developments continued and accelerated during the Dutch Revolt. The Flemish sea fishery was destroyed by the war and replaced with coastal and beach fishing with horses. The Zeeland herring fishery had to acknowledge the supremacy of the Holland herring fishery, although in Zeeland the fishery for salted fish increased. It is striking that, in spite of the outbreak of the Dutch Revolt and the associated consequences of war, the herring fishery of Holland expanded enormously. This is partly due to the safer location of its ports compared to those of Flanders and Zeeland. Around 1630, the Holland herring fishery reached its highest point. After that, stagnation began and the total number of Dutch herring ships decreased by 63% between 1630 and 1770. Eventually, Holland lost its dominant position in the European herring market. Large losses could no longer be compensated, profit expectations declined, and investment decreased. It was only the First Anglo-Dutch war (1652–1654) which finally dealt a deathblow to a

branch of the fishery that, at first, had shown promising growth potential and was for a long time one of the engines behind the economic success of the Dutch Republic. 'Our triumph of Holland', the herring, was no longer one of the most important products of the Dutch economy.

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CHAPTER TWELVE

WOMEN IN DUTCH FISHING COMMUNITIES THE CASES OF TER HEIJDE AND MAASSLUIS, C. 1600–1700

Annette de Wit

Introduction

Seafaring history has been all about men for a long time. The British historian Valerie Burton characterized this phenomenon as the ‘gender-blindness’ of maritime history.¹ In recent years, however, the omnipresence of men is no longer self-evident, as historians become increasingly interested in the role of women in seafaring society.² Research into early modern maritime communities has shown that women all over Europe and in North America had their place in the maritime economy.³ Especially in the fisheries, women played a prominent role in the industry ashore. In early modern northern Portugal, for example, women were engaged in financing fishing voyages, merchandising fish and in ship ownership. They also managed the household, taking care of day-to-day requirements, and arranging all business affairs while their husbands were at sea.

Although economic structures of fishing communities must have been more or less comparable in early modern Europe, one can not speak about a homogenous maritime sector. Differences in culture, law and in demographic, social and economic patterns influenced the position of women in maritime societies.⁴ According to Alice Clark, English women participated only in local trading and selling of fish, in contrast to Dutch women, who were also merchants, earning their money in long distance transactions.⁵ Clark, as well as many other historians, referred to the journals of foreigners travelling through the seventeenth century Dutch

¹ Burton (1991) 182.

² Howell and Twomey (1991); Berggreen (1992); Creighton, Norling (1996); Fury (1998); Burton (1999).

³ Lorentz (1997); Fury (2001); Norling (2000).

⁴ Compare Nadel Klein, Lee Davis (1988) 5–6; Abreu-Ferreira (2000) 26.

⁵ Clark (1919) 219–220.

Republic.⁶ Italian and English writers were amazed by the independence of women and noticed that many women were alone for long periods of time, because their husbands were at sea.⁷

Indeed, seafaring was an important economic sector in the Netherlands. Around 1680, 50,000 people sailed out on ships leaving Dutch ports. In numerous villages and towns, the vast majority of men earned their living at sea.⁸ As a consequence, women had to manage the household without their husbands. In early modern Dutch society, where married women, according to the law, had to be represented by their husbands in public life, the position of sailors and fishermen's wives must have been rather unusual.⁹ Certainly, women in seafaring communities were present in the public arena, but little is known about their social and economic position. Were they able to earn their own money, and arrange business affairs as their Portuguese counterparts did? And how did the absence of their husbands affect women's position both in the household and in society?

Until recently the image of women in the Dutch Republic was rather impressionistic, but lately a lot of research has been dedicated to distinct groups of women, and to the position of women in specific geographical areas.¹⁰ The local and regional approach has proven to be successful in analyzing the social and economic position of women in early modern Dutch society. Following this approach, this paper examines the position of fishermen's wives in two fishing communities in the area around the Maas (Maasmond) in the south of Holland. First, we will look at Ter Heijde, a coastal village of about 550 inhabitants, of which the largest part of the male working population was involved in the coastal fisheries. We will then look at Maassluis, a fishing town of about 3,000 inhabitants, where most men worked in the herring and cod fisheries. After a general survey of the two communities, attention is paid to male and female working populations and to changing labour patterns during the seventeenth century. The division of work, income, and power within the maritime household is analyzed, and the role of women in the local community is explored.

⁶ Compare Schmidt (2005) 2–3.

⁷ For example Guicciardini (1612); Howell (1622); Montague (1696).

⁸ De Wit (2005) 60.

⁹ Schmidt (2004) 26–44; Van den Heuvel (2004) 1–14.

¹⁰ For example Van de Pol (1996); Panhuysen (2000); Schmidt (2001); Van den Heuvel (2005); Schmidt (2005).

*Two fishing communities: Ter Heijde and Maassluis**Geography and economy*

The fishing village of Ter Heijde is situated on the North Sea shore of Holland, near The Hague. The coastal region had already developed into a fishing area by the fifteenth century, when several villages gained access to the (international) market for fresh and dried fish. Thanks to this flourishing trade, the inhabitants were able to invest in the herring fisheries, based in the larger harbours of the nearby Maas estuary (the Maasmond).¹¹ During the sixteenth century, however, the coastal area suffered from numerous floods and shifting sand, which destroyed Ter Heijde several times and worsened the connections with the hinterland. At the end of the sixteenth century, Ter Heijde was no longer able to keep up with the rapid growth of the Maasmond area. Investments in the herring industry were withdrawn and the fish trade was reduced to a regional level. During the seventeenth century, about three quarters to half of the male population worked in the coastal fisheries.¹²

The settlement of Maassluis was situated directly to the Maasmond. The growth of the town was a facet of the economic expansion of this area, quickly developing important fishing and shipping industries at the end of the sixteenth century. In particular, this was the result of its favourable geographical location at the intersection of important trade routes.¹³ There was a high degree of urbanization in the region and a relatively early separation between farming and fishing occurred. Whereas in the north of Holland seafaring was a seasonal activity—farmers supplemented their income with work in the herring fisheries, merchant marine and whaling—in the Maasmond area seafaring developed into a year-round business.¹⁴ In Maassluis, the ties between farming and fishing were finally disconnected by the separation of the agriculturally-oriented Maasland in 1614. Maassluis set up its own government and administration as well as a fishing council, which stimulated the fishing industry. As the settlement grew, fishermen, coopers, shipbuilders and merchants, followed by artisans such as bakers, cobblers and smiths, settled in Maassluis. By 1650, the fishermen's settlement had

¹¹ De Vries, van der Woude (1995) 292–293; Kranenburg (1949) 321–333.

¹² De Wit (2005) 63.

¹³ Van Vliet (1994) 9.

¹⁴ Compare Boon (1996) 151–155.

transformed into an industrial town. About forty percent of the male population was employed in the fisheries.¹⁵

Demography

As in other parts of Holland, an explosive growth of the population took place in the Maasmond area during the sixteenth and early seventeenth centuries. The demographic development of Ter Heijde, however, differed from other communities in this region. Because of the numerous floods, many houses were destroyed and people migrated to other villages. In general, the number of inhabitants declined during the seventeenth century: whereas in 1622 Ter Heijde numbered 564 people, in 1680 only 200 inhabitants were recorded.¹⁶ In contrast to the developments in Ter Heijde, the population of Maassluis continued to grow during the seventeenth century. In 1622 the town numbered 3,000 people and in 1680 Maassluis had 4,000 inhabitants.¹⁷ By 1700 around 4,300 people were recorded.¹⁸

In seventeenth-century Holland the so-called nuclear family was the norm. Families were small, people married relatively late, and in most households only close relatives lived together. Assessment registers show that this was also the case in Ter Heijde and Maassluis. According to a 1680 assessment register, in which the size and the structure of all 54 households of Ter Heijde were recorded, the average family in that year consisted of 3.7 people.¹⁹ This figure is rather low, because children under eight were counted as half a person. In the Maassluis assessment register of 1680 only the 288 wealthiest households were recorded, and the average household there consisted of 4.3 people. Again, children under eight were counted as half a person.²⁰ The difference in size between the Ter Heijde and Maassluis households might partly be explained by the fact that only the wealthiest households in Maassluis were recorded, and these families often had live-in servants.

The assessment registers also give information about the composition of the household. In Ter Heijde about thirty percent of the households

¹⁵ De Wit (1998) 79–80.

¹⁶ Van den Eendenburg (1993) 19; GA Delft, OA 1763 (1680).

¹⁷ Van Dillen (1940) 167–189; De Wit (1998) 79–80.

¹⁸ GA Vlaardingen, OA Maassluis, 521 (1680).

¹⁹ GA Delft, OA 1763 (1680).

²⁰ GA Vlaardingen, OA Maassluis, 521 (1680).

were headed by women. In most cases these were widows (twenty-two percent of the total households). Furthermore, twenty percent of the Maassluis recorded households were headed by women. Again, these were mostly widows (sixteen percent of the total households). The relatively large number of widows was a result of the seafaring character of the communities. Many men died at sea, especially during the numerous wars of the seventeenth century.²¹ At the same time, most married women were also alone, because their husbands worked in the fishing industry. In daily practice, 66 percent of the Ter Heijde households, and half of the households in Maassluis, were managed by women.²²

Men's work

Maritime labour in the fisheries

Fishing boats sailing out of Ter Heijde and Maassluis were almost entirely staffed by local people. Seafaring and fishing in this area and time were strictly male occupations. The master of the boat hired the crew, and the hiring took place in one of the local inns or at the master's home. Usually a number of crew members were related to the master. The rest of the crew was found in his social surroundings, such as co-religionists or neighbours.²³

In Ter Heijde the coastal fisheries were the main source of income. Boats catching plaice sailed out between November and June. Because the boats were small and simply equipped, the costs of exploitation were not very high. The master usually was the owner of the ship, sometimes together with one of his male family members. Many boats were owned by fathers and sons or by two brothers. Occasionally, a master's widow, who hired a new master from among her family members, owned boats.

Masters sometimes borrowed money from the local fish auctioneer, or from the church, when there was not enough money left to make the boat ready for the new season. The fishing gear was brought in by the rest of the crew. The crew was paid in accordance with the number of

²¹ De Wit (2005) 67; Van Deursen (1994) 120–121.

²² Compare Van de Pol (1996) 106–107; Forman Crane (1998) 15.

²³ De Wit (1998) 88–89.

fishing lines each individual crew member owned. Most boats returned every day and the fish was auctioned immediately; however, the crew was paid weekly.²⁴ The fish auctioneer had a central position. He not only sold the fish, but also administered the catch and the proceeds as well as paying the crew. Both the master and the crew in addition to monetary wages also got some fish. In summertime, many masters and fishermen went away to work in the herring fisheries to earn extra money. The old and unhealthy men stayed home to catch shrimp.²⁵

The herring season ran from June to December. About three trips were made each season, with the Maassluis fishermen concentrating on the so-called autumn herring, sailing to the areas east of England and Scotland. The pay of the master and crew was fixed in advance and paid out in installments (a quarter of the total paid after each trip). In this way, ship-owners hoped that the crew would not desert halfway through the season. Again there was a payment in fish, on top of the actual wages, while the ship-owner was responsible for the crew's food and medical care during the trip. In Maassluis the fishermen switched between the herring fishery in summer, and long distance cod fishing in winter. In the cod fishery, the pay of the master and the crew depended on the size of the catch and the prices paid for landed fish. Each master entered into a separate contract with his crew, which laid down the percentage of the catch that each would receive.²⁶

In the sixteenth century, fishermen and masters still were co-owners of the herring and cod ships they sailed on. Thanks to the system of shipping company partnerships they could buy shares, which were usually expressed in nets (herring fisheries) or lines (cod fisheries). The master often possessed a large part of the shares and handled the financial affairs. In the seventeenth century, fishermen were no longer shareholders. Instead of co-owners they became maritime labourers. Although many masters still owned shares in the ships, their position changed as well, as they were no longer head of the business. Professional book-keepers took over the financial affairs. They usually came from rich merchant families that specialized in shipping and fish trade. In Maassluis, these merchants formed an elite, governing the town. A

²⁴ HA Westland, ORA Monster, 103 (1617).

²⁵ De Wit (2005) 70.

²⁶ GA Vlaarding, Visserijarchief Maassluis, 25, 26 (1621–1625).

process of capitalization within the fisheries was underway during the seventeenth century.²⁷

Maritime labour in other shipping branches

The fishermen of Ter Heijde and Maassluis were attached to their profession. There was resistance to working in other branches of shipping. During times of war, however, fishermen were forced to look for other ways to earn money, as the conditions at sea worsened due to continuing hostilities and the actions of privateers. In some years the fishing ships were even forbidden to sail out on the authority of the Government of Holland. In this way, the authorities tried to get enough sailors to work on the war ships.²⁸ As a result of these circumstances, a limited group of fishermen joined the navy. Others tried to make a living by selling shrimp and making baskets. Masters must have been even more reluctant to turn their backs on the fishermen's existence than those from the lower ranks, as they seldom signed on with the navy. Perhaps they had sufficient financial reserves to make it through times of war, or they were able to live off their wives' income.²⁹

Generally speaking, fishermen were not inclined to sign on with the navy or with the Dutch East India Company, as the work in the lower ranks aboard those ships had less status than that in the fishing industry or merchant marine.³⁰ However, most fishermen combined different activities in order to earn their money. Seafaring labour was seasonal. Maassluis fishermen alternated between the herring fisheries and cod fisheries. Ter Heijde fishermen switched between coastal fishing and the herring fishery, and most men combined their fishing activities with the drying of fish, which was usually a family operation.³¹ In addition, fishermen supplemented their income by working as pilots. Others marauded rabbits or sold wood, clothes and food that washed ashore, even though these activities were forbidden, as the beach and dunes of Ter Heijde and all its yields were owned by the Prince of Orange.³²

²⁷ De Wit (1999) 635.

²⁸ Bruijn (1993) 130.

²⁹ De Wit (1998) 91.

³⁰ Davids (1997) 62.

³¹ HA Westland, ONA Monster, 6041 (1654).

³² HA Westland, ORA Monster, 104 (1675) ONA Monster 6028, (1657).

In this way, the men generated an income through a linked series of employments, and by employments throughout the year.³³ Due to the often low and irregular earnings, many men did not make enough money to maintain their families. Therefore the income of their wives was essential to survive.

Women's work

Women's legal status

As elsewhere in early modern Europe, the legal status of women in the Dutch Republic determined the activities to which they were entitled. In early modern Dutch law women were subdued to men, as women were supposed to be physically and mentally weaker than men.

In principle every woman needed the guidance and protection of a man. However, the amount of freedom based on the legal status was not the same for every woman: their marital status was decisive. Married women were treated differently from unmarried women and widows. They were not allowed to perform legal acts, and they had to be represented by their husbands in public life. Single women older than twenty-five, and widows, on the contrary, were considered capable of performing legal acts. This meant that they were allowed to carry out legal transactions, could enter into contracts and appear before court. Furthermore, they were allowed to administer their own property.³⁴

Even though married women were not considered capable of handling financial matters, the legal system created some pragmatic solutions in order to let women conduct the household properly. For household expenses, for instance, married women did not need their husbands' approval. However, differences of opinion on those expenses could quite easily lead to problems within the marriage.

Concerning legal matters, there were some possibilities to enlarge the freedom of married women. City authorities could temporarily suspend the husband's guardianship over his wife, on her request. This happened only under certain circumstances, for instance when males were absent due to seafaring or travelling. Sometimes the guardianship

³³ Compare Lucassen (1984) 159–161.

³⁴ Schmidt (2001) 55–61; Schmidt (2004) 26–44; Van den Heuvel (2004) 1–13.

was suspended because husbands were no longer able to function as the head of the household, as a result of temporary illness or consistent drunkenness. In most cases the wives were granted the authority by the courts to handle business affairs.³⁵ Although their husbands were still alive, the authorities considered them as widows, as they were called *onbestorven weduwen* or grass widows.

Another category of married women had a special legal position: the female public vendors. These women were allowed to run their own trade, apart from their husbands. Whether or not these female public vendors needed consent from their husbands is still subject to discussion.³⁶ It is certain that they gained more freedom to operate independently than other married women.

Wives of fishermen

Wives of sailors and fishermen had a legal position that often differed from that of other married women in the Dutch Republic. Before leaving, many men working in the shipping industry gave their women a power of attorney. In this way women were allowed to act independently regarding legal matters, and they could arrange all business affairs. The power of attorney was valid until the husband returned, but not all husbands gave their wives a full power of attorney. Sometimes the women were only allowed to act in specific matters, for example to collect an inheritance or to pay certain debts.³⁷ Concerning all other matters, a male family member had to act on behalf of the husband or an attorney was hired.

Sometimes local governments stepped in. In Ter Heijde, for instance, local authorities prevented a sailor's wife from selling the family house, because she only could show a letter from her husband but no official power of attorney.³⁸ On the other hand, city authorities were, as discussed earlier, prepared to suspend the guardianship of fishermen over their wives, if necessary. Sometimes neighbours were asked to testify about the reputation of the woman in question, but in most cases the requests were granted. The local government must have realized the economic advantages of fishermen's wives acting on their own. In this

³⁵ Van den Heuvel (2004) 2–3.

³⁶ Ibidem.

³⁷ De Wit (2005) 71–72.

³⁸ HA Westland, ORA Monster 180.

way, women had more chance of managing their affairs in a proper way and stay economically independent, which may have kept them from asking for social support.³⁹

Generally speaking, the wives of fishermen in Maassluis and Ter Heijde had more opportunities to earn money than other married women. The wives who obtained a full power of attorney were allowed to set up their own businesses. Others managed a trade together with their husbands, but took care of all business affairs when their husbands were away. Many fishermen's wives worked in the trade and industry connected to shipping. In seafaring communities they had the advantage of the social network of their husbands. Book-keepers, for instance, preferred to buy ships' supplies from the wives of the masters sailing on their ships.

At the same time, the type of work women did was restricted by local laws and guild-regulations. Fish processing, for example, was off limits for the female population.⁴⁰ Moreover, in setting up a business women remained dependant on their husbands, because men's social rank to a large extent determined women's access to money and social capital.⁴¹ In the following paragraphs we will discuss the economic activities of fishermen's wives in more detail.

Nets and lines

Family relations were very important within the fishing industry. Traditionally, fishwives and daughters took care of the making and mending of the herring nets. They also repaired and unravelled the lines used in the cod fisheries. In the sixteenth century, fishermen who were co-owners of a ship still brought in their own nets and lines. At that time, the making and mending of nets took place within the household. Most fishwives worked in their yards or in their neighbours' yards. Daughters learned how to mend at an early age; most girls were about eight or nine when they became involved in the labour process.⁴²

During the seventeenth century the mending and repairing of nets became increasingly professional. Fishwives no longer worked in their homes to mend and repair the nets for their husbands; instead they

³⁹ Van der Heijden (2002) 195–197; Van den Heuvel (2005) 71–75.

⁴⁰ De Wit (2005) 71.

⁴¹ Ibidem.

⁴² Veen (1992) 183.

became employees of merchants and ship-owners. The mending of the nets took place in special attics or in the courtyards of the merchants' warehouses. Women were paid per net mended or repaired.⁴³ In contrast to the period before, women now had money at their disposal. The disadvantage, however, was that they had to work regular hours, leaving less time for the household duties and other work.

Women were also involved in the examining of fishing gear. The nets used in the herring industry had to be examined by 'keurvrouwen', inspectors appointed by the town government to test if the nets were made according to the provincial laws. There were instructions concerning the material the nets had to be made of, and about the size of the meshes.⁴⁴

As the making and mending of nets was a strictly female affair, the inspectors of the nets were also female. In general, the inspectors were either single women or masters' wives, and they were paid per net examined. The inspectors had a rather powerful position within the fishing communities, so much so that every fisherman had to visit them before leaving, to have their nets examined.

During the eighteenth century, the position of the female net-inspector changed little by little, as male net-inspectors entered the profession. In the nineteenth century the profession had become a strictly male business. This process might partly be explained by the economic decline combined with the rising ideals of domesticity in the eighteenth and nineteenth century, which resulted in a lower labour market participation of women.⁴⁵

Fish trade

Fishwives were also traditionally active in the fish trade. As shown before, masters and fishermen were paid in fish in addition to cash. Part of this fish was called 'women-fish', because the wives sold it to earn some extra money. Usually they put the fish in a basket and sold it house-to-house. The other fish, often of inferior quality, was used for direct consumption.⁴⁶ Fishwives selling fish earned by their husbands were a familiar sight in Ter Heijde as well as in Maassluis. In the course of

⁴³ GA Delft, OA 1,5, (1597).

⁴⁴ Vermaas (1926) I, 62–65.

⁴⁵ For a discussion on this subject: Everard (2005) 81–102.

⁴⁶ Vermaas (1926) II, 145–146.

the seventeenth century however, the position of the fishwives changed. The amount of fish earned by the crew diminished, due to new laws, which prescribed that all fish had to be sold at the public auction. This was a way to guarantee the quality of the fish and to enlarge the local government's revenue from the auction taxes.

In Ter Heijde in general the fish trade was a women's job. For a long period during the seventeenth century a female auctioneer worked at the fish auction. She was a widow who had continued her husband's profession after his death. Most fishwives bought fish at this auction and sold it either house-to-house or at the fish market of The Hague, where the richest amongst them rented a stand.⁴⁷ Some of the poor women worked only as fish carriers. They brought the fish to the market in The Hague and were paid by the market fish sellers. In general, fishwives in Ter Heijde were mainly active in the retail trade of fresh fish. For the wholesale trade in dried plaice, directed towards the export market, more capital was needed.

The fish trade in Maassluis was even more directed towards export. Especially in the herring trade, a large input of capital was needed. Most herring traders were ship-owners at the same time, and most of them were men. Fishwives were usually too poor to participate in this business. The wives of masters, however, were occasionally involved in the herring trade. Men were also in the majority in the wholesale cod trade. A list of 46 Maassluis cod fish sellers in the 1620s and 1630s shows that only six vendors were female.⁴⁸

Female ship-owners

As discussed earlier, in Ter Heijde masters were often sole owners of their fishing boats. When a master died, usually his widow inherited his property, including the boat, or part of the boat.⁴⁹ When there were no sons to take over the business, the widow could either sell the boat or hire a new master. When she decided to hire a master, she went into contract with him, to determine her share of the profit. If there was already a co-owner, usually the brother of the deceased master; she simply retained her share, and divided the profit with her brother-in-law.

⁴⁷ Stegeman (1998) 48.

⁴⁸ Archief Hoogheemraadschap Delfland, lijsten met viskopers (1621–1636).

⁴⁹ De Wit (2005) 74.

In Maassluis there were two main types of ship ownership. There were several large-scale ship-owners, those who possessed one or more ships, and there also existed the system of company partnerships, with several people taking shares in one ship. Shares in ships could be inherited, bought directly from the owner, or at an auction.

Most investors had shares in more than one ship and business partners were often related. Of the five seventeenth century deeds found in the Maassluis legal archives, which list all the partners in one enterprise, all five showed at least one family relationship amongst partners. This is not surprising given that the Maassluis merchant families were often linked by marriage.

One example is provided by the owners of the ship that was commanded by master Arij Jorisz Knecht. The shareholders were Gijsbert van Loo, Lambertus van Oosterwijck, Cornelis Arijensz van Meer, Jacobus de Lange and Teuntje Leenderts Nelis, the widow of Bastiaen de Lange. The common thread is linked to the De Lange family; Gijsbert van Loo was married to Marija de Lange, who was related to Jacobus and the late Bastiaen de Lange.

Widows like Teuntje Leenderts Nelis were often shareholders in a shipping company. In most cases they inherited the shares either from their husbands or from other family members. According to Dutch law, sons and daughters had equal rights of succession, therefore married and single women could inherit shares.⁵⁰

When Gijsbert van Loo, the husband of Marija de Lange, died, she not only inherited his shares, but continued his business. As a descendant of one of the principal ship-owning families, she must have been used to the daily practice of running a shipping company. Moreover, she had probably managed the business together with her husband before his death. Married women in the De Lange family all owned their own shares. In this rich family most women did not marry in community of property, but under the separate estate arrangement. Their shipping shares therefore did not automatically become the possession of their widowed husbands.

In auctions of ships and shares, women were also active, though they were mainly widows and usually sellers instead of buyers. It seems that many widows sold their shares because they needed cash. Few women visited the auction to invest money, and if they did, these were widows

⁵⁰ De Wit (1998) 98–99. Compare Abreu-Ferreira (2000) 10–11.

who came from typical merchant families, like Marija de Lange. The wealth and family background of the widow was decisive as to whether or not she could continue her business. If there was enough money, she had the same opportunities as her male competitors.

Vendors of ship supplies, shop owners and innkeepers

The ships leaving Ter Heijde and Maassluis had to be supplied by a range of different products: ropes, barrels and food for the crew. In Ter Heijde the wife of the master was responsible for the food aboard the boat of her husband. As the boats fishing for plaice returned every night, there were no big stocks necessary, and therefore little money involved in this trade. The wife of the master bought the necessary bread, groceries and beer in the fishing village itself or in the nearby village of Monster.

Supplying the ships in Maassluis was quite a different story. The bookkeepers bought the food in large quantities, partly in the town itself and partly in the nearby Schiedam. Many wives of masters delivered food, beer, and candles. Thanks to the contacts of their husbands they received large orders. At the same time they delivered goods to institutions such as the local orphanage.⁵¹ The wives of ordinary fishermen were not able to have as large a business as the master's wives did, but many of them ran a little shop dealing in groceries. The poorest sold all kinds of products like apples, nuts and eggs, going from house to house.⁵²

Next to the trade in ships' supplies and the retail trade, many fishwives owned an inn. In Ter Heijde as well as in Maassluis those inns had an important social function within the community. Masters hired their crew, shares in shipping companies were auctioned and news about the ships at sea was shared at the inn.⁵³ Some of the owners of inns also supplied beer to the ships.

Housework

Just as other women in early modern society did, fishermen's wives spent a lot of time doing work within the household. Cooking daily

⁵¹ De Wit (2005) 73; GA Vlaardingen, OA Maassluis, 712–723 (1649–1675).

⁵² De Wit (2005) 75–76.

⁵³ Compare Van de Pol (1996) 149.

meals, washing, repairing and sewing clothes, cleaning the house and taking care of the children were common activities. Although the Maasmond area was heavily urbanized, many women had little gardens where they grew vegetables and held some small animals. The rest of the food was bought at the local market or traded for the home-grown vegetables.⁵⁴

The sewing and repairing of clothes was an important job because clothes were very expensive in the seventeenth century.⁵⁵ The Maassluis and Ter Heijde women not only took care of the clothes of their own family, but they also repaired and washed clothes for single seamen. Others worked for the local orphanage.⁵⁶ The deacons, who were responsible for the poor relief, stimulated the housework by providing for spinning wheels and fabric.⁵⁷

Further on, women earned money by taking in lodgers. Often these were older or single fishermen who were part of the crew of the landlord. Next to lodgers, many families had one or two foster children. They got a fixed sum of money from the *heilige geestmeesters* to take care of food and clothes for the children. In most cases these arrangements contributed to the family income, as the foster parents were entitled to the wages earned by the children. In the case of boys the situation was even more favourable, because they earned money by going to sea with their foster-father and at the same time did not lean on the family budget.⁵⁸

The household

The seventeenth-century household was a flexible one. As mentioned earlier, men and women combined different jobs and activities to contribute to the family economy. People were often forced to look for a supplemental income to their main earnings, especially in the lowest strata of society. Consequently it is very difficult to estimate the total income of a household. Furthermore, labour conditions and wages could differ from year to year, and some ways of earning money were

⁵⁴ De Wit (2005) 78.

⁵⁵ Dibbitts (1998) 191.

⁵⁶ GA Vlaardingen, Weeshuisarchief Maassluis, rekeningen.

⁵⁷ GA Vlaardingen, Kerkarchief Maassluis, Diaconiearchief.

⁵⁸ Weeshuisarchief Maassluis, losse stukken.

occasional or illegal. In war years, normal patterns were abandoned. During these times, men went from house to house selling shrimp or helped with mending nets.⁵⁹

Women were part of informal circuits, in which goods and services were exchanged.⁶⁰ They also lent each other money and provided shelter. In Ter Heijde, ravaged by numerous floods in the seventeenth century, families had to live together for a while, because there were very few houses left.

Fishermen's wives depended on each other while their husbands were away, and formed a 'survival network'.⁶¹ Children also contributed to the family income. As discussed earlier, girls helped their mothers by mending nets and sewing clothes. Young boys not old enough to go to sea contributed to the family economy by collecting pieces of rope left on the rope-walks.

Generally speaking, the earnings of each individual family member were brought into the household. In Maassluis and Ter Heijde however, women controlled the household budget. In the probate inventories of bakers and groceries, the wives of the fishermen were always listed as the debtors. In the registers of poor relief not only single women, but also married women, were listed by the deacons.⁶² Only women came to the office to collect the money. Although women had their own income, there are indications that they still remained dependant on their husband's earnings. For example, in wartime, women who usually were not listed in the registers of poor relief were forced to ask for money from the deacons, because the income of their husbands decreased. In 1672 there were so many poor households in Maassluis that the fishing council decided to pay for bread for the families in need.⁶³ Husbands were dependent on their wives' income too, as the yields in the fisheries were unstable. Moreover, in the course of the many wars of the seventeenth century, many men were imprisoned thanks to English and other privateers. Their families had to pay the ransom, although they got some help from the community.

⁵⁹ De Wit (2005) 68.

⁶⁰ Compare Van de Pol (1996) 113, 296.

⁶¹ Compare Van Wijngaarden (2000); Lorentz (1997).

⁶² Kerkarchief Maassluis, Diaoniearchief, 51.

⁶³ GA Vlaardingen, OA Maassluis, Visserijarchief, rekeningen (1672).

Women in society

Fishermen's wives functioned as a social and cultural intermediary for their husbands. Through letters, the husbands were not only informed of daily occurrences, but also about politics and religion, as we can tell from the letters that wives wrote to their husbands during the Second English War (1665–1667). As mentioned before, fishermen found employment in the navy in this period. For the men on the navy ships, fighting for 'the Dutch cause', it must have been of utmost importance to learn about the latest developments. Meanwhile, the women could keep the community posted about the war at sea, through the letters they received from their husbands. In the inns run by fishermen's wives, other women came to ask for news about their husbands and sons.⁶⁴

The fishwives of Maassluis were known fighters for their husbands' interests. During the naval wars with the English, many fishermen were kept imprisoned, and their wives tried to speed up their release by protesting and asking for ransom at the admiralties in Rotterdam and at the Government of Holland in The Hague.⁶⁵ Travel expenses were paid by the local fishing council. The council must have known what impact the protesting women could have on the admiralties. Usually the requests of the women were granted. The governors in Rotterdam and The Hague may have acted not only out of compassion, but perhaps also out of fear of riots. Women of sailors often participated in rebellions during the seventeenth century.⁶⁶

Women also defended their husbands' cause at the local fishing council. In 1654, for example, four women appeared at the council meeting to plead for a remembrance board for the fisheries and fishermen in the local church.⁶⁷ Originally the board was an initiative of local masters. By hanging a remembrance board in the church, they emphasized the connection between fishing and the church and honoured their profession.⁶⁸

⁶⁴ Bruijn and Van Eijck van Heslinga (1985); Van de Pol (1996); De Wit (dissertation in preparation).

⁶⁵ GA Vlaardingen OA Maassluis, Visserijarchief, 73 (1666).

⁶⁶ Dekker (1997).

⁶⁷ GA Vlaardingen, OA Maassluis, Visserijarchief, 73, (1654) Sullivan (1987).

⁶⁸ Frijhoff (2002) 215–230.

Fishwives functioned as intermediaries of culture as well. The image of the sailor as an outsider is a known one and this image already existed in the seventeenth century. Seamen were supposed to be undisciplined, sinful people, living outside the morals of shore society. Some of these ideas echoed in the notes of the aldermen of the Maassluis Reformed church, who complained about the impiety, drunkenness and infidelity of fishermen. Sometimes the wives of fishermen were called upon by the church council to explain the behaviour of their husbands. Most often they were asked to give a message to their husbands when they returned from sea.⁶⁹

Finally, women were important to the local church. Not only did they form the largest group of church-members, but, the (religious) education of their children (and husbands) was almost entirely in their hands. At the same time, the church provided a shelter for the fishwives whose lives were harsh and insecure. The support the church provided was not only spiritual but also material, as poor church-members received a weekly allowance from the poor-relief board.⁷⁰

Conclusion

According to seventeenth century travel accounts, Dutch women were independent because their husbands were at sea. Yet, until recently in maritime history, little attention was paid to women in seafaring society, despite the fact that in the fishing villages of Maassluis and Ter Heijde, for instance, women formed the majority of the population throughout the year. Due to the low and irregular incomes of their husbands, women had to work in order to survive. Fishermen's wives, generally speaking, had a different legal position to other married women in the Dutch republic. Thanks to the system of power of attorney, they were allowed to set up their own businesses, arranging all business affairs and managing the household.

Many fishermen's wives worked in the trade and industry connected to shipping. They could take advantage of the social network of their husbands. At the same time the type of work women did was restricted by local laws and guild-regulations, and their possibilities were influ-

⁶⁹ Kerkarchief Maassluis, Acta Kerkenraad, (1598–1628); De Wit (2008).

⁷⁰ Kerkarchief Maassluis, Acta Kerkenraad, (1598–1628); De Wit (2008).

enced by their husbands' social rank and income. In the fish trade, for instance, only wives of masters or rich widows had enough money to invest in the export trade of herring, as was the case in the investments in shipping companies.

Many women combined different jobs to survive and a large part of the work was done within the household. Due to developments within the fishing industry, the traditional work of mending nets in the household changed in the course of the seventeenth century. Women had to work as employees, which left less time for them to earn money within the household, such as by sewing clothes or growing food.

The seventeenth century household was flexible, with all family members contributing to the family economy. Women were part of informal circuits, where they exchanged goods and services. While women controlled the household budget, they remained dependant on their husbands' income. Similarly, fishermen could not survive without the income of their wives, especially during the numerous wars in the seventeenth century.

The maritime household functioned as a cornerstone of seafaring society. Men and women depended on each other; not only in an economic but also in a social and cultural sense. Fishermen's wives functioned as an intermediary for both the moral codes and the daily occurrences of society. They kept their husbands posted on developments ashore, and if necessary fought for their rights. In the local church they played an important role, comprising the largest group of church members and being responsible for the religious education of the other family members.

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CHAPTER THIRTEEN

TALKING FISH CO-OPERATION AND COMMUNICATION IN THE DUTCH NORTH SEA HERRING FISHERIES, C. 1600–1850

Bo Poulsen

Introduction

This study applies economic resource theory and results of modern anthropological case studies in order to discuss information sharing in a historical context, which had a distinctly institutional, technological and cultural set-up. The Dutch North Sea herring fishery of the early modern era is found to have been managed and organised in a way that favoured large-scale co-operation and sharing of fishermen's knowledge on where to fish.¹

The historical data material consists of normative as well as empirical sources. The normative part is an analysis of the regulatory body, the *College van de Grote Visserij*, which dealt with how the fishermen interacted at sea. For reconstructing the empirical past, registers of landings of herring in the Netherlands, and readings of diaries and logbooks kept aboard fishing vessels, are other important sources in this study. They all provide the documentation for an assessment of formal as well as informal systems providing different levels of co-operation and communication within the Dutch North Sea herring fisheries. The

¹ This paper refers to results from my PhD project on 'The exploitation of the North Sea marine resources, c. 1600–1850'. I thank my supervisors professors Poul Holm and Brian R. MacKenzie as well as René Taudal Poulsen, Christiaan van Bochove and Jan P. van de Voort. I gratefully acknowledge financial support for this project from the History of Marine Animal Populations (HMAP) project of the Census of Marine Life (CoML), Danish Network for Fisheries and Aquaculture Research (Fishnet.dk), Marine Biodiversity and Ecosystem Functioning EU Network of Excellence (MARBEF), Consequences of weather and climate changes for marine and freshwater ecosystems (CONWOY) and Maritime History and Marine Environmental Research School (MARINERS), Centre for Maritime and Regional Studies.

analysis shows that the fishermen communicated intensely with each other. They helped one another to find the herring at sea, which is found to be in concordance with environmental and institutional incentives found in modern fisheries. The article further discusses to what extent valuable information on the fishing grounds were freely shared. Here, the origin of the skipper seems to have played a role for how much the Dutch fishermen interacted with each other.

Theories on fishermen's behaviour

The behaviour and interaction within groups of fishermen at sea is an important aspect in any large-scale fishing operation. From the point of view of fisheries management, it is desirable to understand how different strategies of a group of fishermen influence the fishing effort and thereby fishing pressure on a given limited natural resource. In an assessment of the economic performance of a fishing fleet, it is likewise of interest to know which type of behaviour is adopted by the individual fisherman, as well as by the group as a whole.

In the view of marine scientists Ray Hilborn and Carl J. Walters, the issue of fishermen's behaviour is still poorly understood. In 1992 they wrote in their highly influential study *Quantitative Fisheries Stock Assessment*: 'Fleet dynamics is probably the most understudied subject in fisheries'. Later in the same chapter they go on to say that fisheries science will be far richer, and our understanding of how fisheries behave advanced further, if half the energy that goes into biological studies of fish were devoted to behavioural studies of fishermen.² Having recognised the need for such studies, however, the same study itself takes a rather narrow view on the behaviour of modern fishermen: 'In making the supposition that fishermen have dynamics analogous to natural predators, we are taking a competitive and market-oriented view of the economics of fishing; this is more realistic for most fisheries than to assume that fishing is a communal, cooperative, and altruistic process.'³ This view is modified in a recent introduction to *Marine Fisheries Ecology*, where the authors put forward that, 'fishing is not just about catching fish and making money; rather it is bound up in the culture of

² Hilborn and Walters (1992) 153–154.

³ Hilborn and Walters (1992) 104.

coastal societies'.⁴ A similar recognition of taking economic and social as well as environmental factors into consideration when analysing the behaviour of fishermen has emerged within resource economics. In a now classic 1954 article on common property resources, the Canadian economist H. Scott Gordon proposed that in an *open access* fishery, new fishermen will enter the fishery until the profit margin reaches zero. This is because of the law of diminishing returns. Under an unregulated private exploitation the marine resource in question will yield no rent, either because of economic problems or because of depletion of the natural resource. However, if fishermen succeed in placing their activity within some sort of social control, they can make a greater profit. For instance, fishermen would turn the open resource into a local monopoly by regulating entry of new fishermen and controlling their own operations. The fishery thereby changes from being an entirely open access fishery into a *limited entry* fishery.⁵

In 1968, the biologist Garrett Hardin also dealt with the problem of common property resources, and proposed that common property resource exploitation would inevitably lead to a severe depletion of the natural resource. In describing this process he coined the term 'Tragedy of the Commons'.⁶ This problem is highly relevant to many modern fisheries, but already in the period of c. 1600–1850, the Dutch North Sea herring fisheries did not extract enough fish from the sea in order for the North Sea herring populations to be affected. For 2003, the International Council for the Exploration of the Seas assessed that 400,000 tonnes of herring could be fished from the North Sea without causing the stock to be depleted.⁷ By comparison, the Dutch North Sea herring fishery never exceeded an annual catch of more than 60–70,000 tonnes.⁸

What neither theory deals with, though, is the problem of *finding* the fish, but this has been discussed by economist James A. Wilson. He adds to the above theories that every fisherman has a learning problem when searching for fish. Since the ocean is large, no individual fisherman acting alone could hope to acquire the experience necessary to establish the regularity or predictability required for a successful exploitation

⁴ Jennings *et al.* (2001) 126.

⁵ Gordon (1954) 124–142.

⁶ Hardin (1968) 1243–1248.

⁷ ICES (2003) 34.

⁸ Van Bochove (2004) 27.

of large marine resources. Rather, fishermen need to co-operate and exchange information with other fishermen. But whoever catches the fish owns the fish, and this gives an incentive for individual rather than collective acquisition of new knowledge.

Knowledge of good fishing places therefore becomes a potentially important economic asset, but it depends on the nature of the natural resource being exploited. Some fish aggregate in groups, such as herring schools, which are known as patches. If the individual fisherman has the capacity and technology to completely exhaust a patch of fish on his own, he does not have an incentive to share his acquired knowledge of this particular patch of fish. If, however, there is plenty of fish available once a patch is located, the fisherman finding the patch is holding a valuable asset, which he can exchange for similarly valuable assets from other fishermen he trusts. When such a phenomenon occurs and fishermen collaborate, they are forming a *club*.⁹

Economist Neal Stuart Johnson has compared a number of empirical studies on information sharing in *limited entry fisheries*. A limited entry fishery is one where only fishermen with formal licences to fish are taking part in the fisheries. The contrast is known as *open access* fisheries, where fishermen can enter and leave a distinct fishery as they please. Johnson concludes in agreement with the above-mentioned incentives pointed out by Wilson that, especially in herring fisheries, formation of information sharing clubs occur.¹⁰ This has to do with herring being a highly migratory species aggregating in schools or patches often larger than the capacity of any boat in the fleet, and located far from the fleet's port of origin. The benefits of a co-ordinated search would then tend to be relatively high, and catch reduction costs relatively low. This favours relatively small and stable groups of co-operating fishermen and disadvantages the position of independent, non-cooperating fishermen. In economic theory this type of fishermen is called a *free rider*.¹¹

As mentioned above, recent research points to an increasing awareness of the role of social and cultural factors in fishing strategies, such as the fisherman's choice to fish alone or within more or less loosely formed clubs of information sharing. The set-up of a fishing fleet operating far away from home targeting a migratory species such as North Sea her-

⁹ Wilson (1990) 12–29.

¹⁰ Johnson (1993) 108–126.

¹¹ Wilson (1990) 24.

ring, but without risking overexploitation of the fish stock, reflects the challenges facing an early modern high sea fishing operation such as the Dutch North Sea herring fisheries. In line with the above theories, it is assumed that they would expect to catch more and reap a larger profit the more they co-operated when fishing. So, how well did the Dutch herring fishery conform to modern theories on information sharing in limited entry fisheries? The economic culture of any past or contemporary commercial fishery is much influenced by its historical setting. In order to properly assess the significance of the fisheries strategy in the Dutch herring fisheries, it is useful to situate it in its early modern historical context.

Fishing strategies within the College van de Grote Visserij

The first modern fishery

The historians Jan de Vries and Ad van de Woude have characterised the Dutch Republic as the world's first modern economy. While not modern in the sense of our current industrial economy, they found nonetheless a number of qualities which set the Dutch apart from the rest of Europe, from around 1500 until the advent of the industrial revolution. Among these qualities were the existence of relatively free markets for commodities as well as for labour, land, and capital. The Dutch also had a substantial agricultural productivity, which enabled a complexity in social and occupational structures that made possible an extensive division of labour. Moreover, the Dutch Republic was a state whose policy making and enforcement was conscientious to property rights, negotiation and upholding of contracts, as well as the material well being of its inhabitants. Finally, De Vries and van der Woude found a level of technology and organisation capable of sustained development of a material culture with the capacity to sustain a consumer behaviour oriented towards the market.¹² In their analyses of a variety of economic sectors in Europe, de Vries and Van de Woude concluded that, in the heyday of the seventeenth century, the Dutch herring fisheries held a

¹² De Vries and van der Woude (1997) 693.

status and profile in terms of employment and capital investment unlike any other branch of economic activity.¹³

In the 1560s a number of Dutch towns formed a regulatory body, known as the *College van de Grote Visserij*, which during the last decades of the sixteenth century was granted a privilege by the States of Holland. The *College* was thereby given jurisdiction over the entire Dutch herring industry with respect to the catch, processing, distribution, and marketing of salted herring.¹⁴ The privileged towns forming the *College* upheld a monopoly of the landing of salted herring in the Netherlands until the 1850s. The *College* regulated the size and use of the fishing gear, driftnets, and the length of the season. Regulations are common features of the management of modern fisheries resources; in the twenty-first century fisheries they are mainly introduced with the objective of preserving fish stocks and ocean biodiversity against human exploitation. In the early modern era, however, the main purpose of the regulations of the *College* was to preserve the quality of what was the top brand of salted herring in Europe.

The season started on the eve of St. John's day, 24 June. Following a government decree of 1582, the fishermen were not allowed to fish for herring after 31 December. In 1604, however, the fishing season was extended to 31 January.¹⁵ These key dates remained the law until the *College* was finally dissolved in 1857. The main body of the laws of the *College* stemmed from 1580, and continued unchanged until the Batavian Republic imposed a new but only slightly updated set of rules in 1801. The last renewal of regulations under the auspice of the *College* was in 1827.¹⁶

According to De Vries and van de Woude, the regulatory measures forced the fishermen to function as a sort of consortium, which produced and sold a standardized product. The *College* oversaw that the large (up to 1.4 km long) driftnets (spanning 22,000 m² when set out) had the right height and length and a standardised mesh size.¹⁷ The process of curing the catch aboard large factory-like ships, herring busses, the size of the barrels used for packing the salted herring, the quality of salt used as well as the branding of the finished product

¹³ De Vries and van der Woude (1997) 266.

¹⁴ Mietes (1984,1) 11–18.

¹⁵ Kranenburg (1946) 151–155.

¹⁶ Mietes (1984,2) 166–172.

¹⁷ Tillema (1917) 104.

ashore were all carried out in the manner prescribed by the *College*.¹⁸ In other words, the Dutch herring fishery was in many ways a representative of the first modern economy, hence they could be termed the *first modern fishery*.

When the *College* was first inaugurated in 1567, representatives from thirteen different towns and villages participated, but already by 1600 the *College* consisted of representatives from towns from the two main administrative areas of the Holland province. From the Noorderkwartier, Enkhuizen sent deputies to the *College*, while the Zuiderkwartier towns of Delftshaven, Brielle, Rotterdam and Schiedam also held seats in the *College*. During the eighteenth century the neighbouring towns of Vlaardingen and Maassluis became the main entrepôt for salted herring, landing more than half the total Dutch production.¹⁹ The main herring ports of the Dutch Republic are shown on the map (figure 1).

Not until 1795 did Vlaardingen and Maassluis receive the formal rights to participate in the management of the *College*. After the Napoleonic Wars the *College* was reorganised, and in 1822 the management was appointed by the towns of Vlaardingen, Maasluis, Enkhuizen, De Rijp, Amsterdam, and Rotterdam.²⁰ The distance between the towns along the River Maas in the Zuiderkwartier and Enkhuizen and De Rijp in the North is almost 100 kilometres, so one might expect fishermen to form informal sub-alliances within the greater community of the *College*. One would also expect that fishermen would be working more closely together with other fishermen from their home town or region than they would with neighbouring towns and regions.

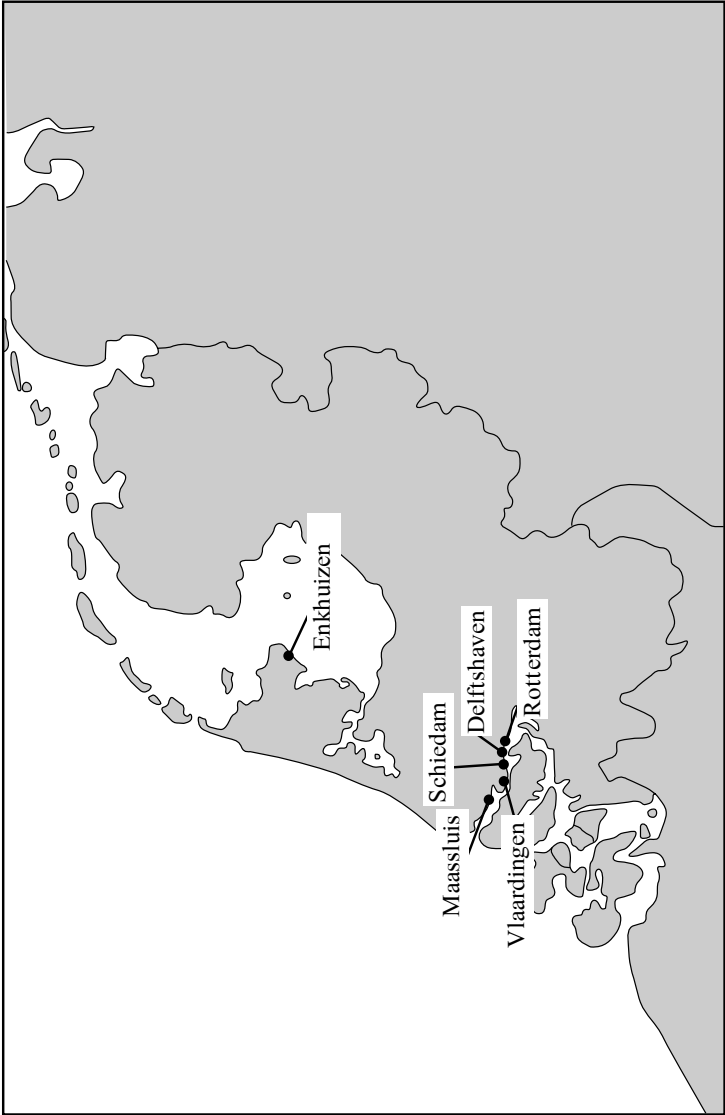
In this way, the behaviour of the Dutch fishermen could be analyzed as any well-regulated, large-scale capitalist enterprise. When it comes to the fishing strategy, it can be said that the fishing *club* of the *College* provided the framework for a *limited entry fishery* into the Dutch North Sea herring fishery. But to what extent did the fishermen interact and collaborate when fishing? This can be considered by examining testimonies of actual behaviour on the fishing grounds. One of the instruments of cooperation was the concept of *ventjagers*. These were boats that joined the herring busses at sea to buy their catch, in order

¹⁸ Kranenburg (1946) 18–22.

¹⁹ Kranenburg (1946) 180–181.

²⁰ Mietes (1984,2) 171.

Fig. 1. The map shows the towns engaged in the herring fishery of the Dutch Republic, all located in the coastal province of Holland. The main cluster of towns were located along the mouth of the River Maas in the southern part of the province, the Zuiderkwartier, while Enkhuizen and later Amsterdam were both situated in the northern part of Holland, in the Noorderkwartier.



to sell the first herring of the new season, before the herring busses would return to shore.

Ventjagers

The *College* had an interest in controlling the market for salted herring. Prices were highest in the beginning of the season, in June, July, and August, when the quality peaked and the European markets longed for freshly salted herring. This would give some fishermen an incentive to rush home with a boat half-empty, if they had been lucky during the very first days of fishing and caught a high number of herring relative to other fishing boats fishing within the *College van de Grote Visserij*. This would give the faster fisherman a relative advantage over the majority, but not necessarily lead to an increase in profits of the fleet as a whole.

The *College* had already had the foresight to regulate this traffic in 1604. From 1632 onwards, the rules of the *College* stipulated that no fishing vessel was allowed to leave the fishing grounds and return home before 15 July, and that arriving inside the coast line was not legal before 19 July.²¹ In cases of violation of this rule the offender was to pay a huge fine. In the early 1800s the fine was 3,000 guilders, or what was seen as the equivalent of the worth of a full shipload of herring.

The origin of the *ventjagers* is almost as old as the Dutch high seas herring fishery itself, and they are first mentioned in the fifteenth century. The 1632 regulations also stipulated that the only vessels allowed to enter a Dutch port with herring prior to the 19 July were the *ventjagers*. The period from the start of the fishery on 24 June until 15 July was even known as the *jaagtijd*, meaning the time when the *ventjagers* were buying up fish in open sea.²²

The *ventjagers* were often older fishing vessels, which were transformed into pure cargo vessels. Any merchant could apply to the college for sending out *ventjagers* that would buy up herring from the fishing vessels in open sea. Normally the *ventjagers* were financed and manned by members of the herring fishing community operating within the *College*. The *ventjager* vessels would then sail in the proximity of the herring vessels and collect barrels of salted herring from different

²¹ Beaujon (1885) 51–53.

²² 'Articulen', NA, ACGV. inv. no. 686, p. 12 and Assenberg (2001) 8–9.

vessels. The herring landed by the *ventjagers* could then be sold for a very high price, and the profit shared between the *ventjagers* and the fishing boats that had initially caught the herring. Each crew of fishermen that had given over fish to the ventjager at sea received payment in proportion to how much the crew had handed over. If a ship acted like a ventjager without prior consent of the *College*, it would be fined 1,000 guilders.²³

A further institutional tightening of the business of *ventjagers* came in 1725 with the set-up of the *Gemeenschap van ventjagerije*, or the community of ventjagers. Thereafter the ship-owners organised in the *College* consented to having a certain number of *ventjagers* joining the fishing fleet each year. They also agreed upon how much the merchants aboard the *ventjagers* had to pay for a barrel of salted herring. They even agreed on how much every *ventjager* was supposed to buy up and bring home. In order that everybody was aware of this, a list of *ventjagers* was drawn up each year, stipulating, for instance, that the first *ventjager* went to one of the towns of the Zuiderkwartier, the second *ventjager* to Enkhuizen in the North, the third and fourth *ventjager* to the Zuiderkwartier, etc., furthering the ship-owners' monopolistic control over the production side of the herring industry.²⁴ Thus, by law the ventjagers acted as instruments of cooperation between the fishermen of the various towns represented in the *College*.

Another aspect of the 1725 laws was that each *ventjagers* should sail with a distinct flag showing which town it came from. The regulations, however, did not stipulate whether the ventjagers from one town could receive herring from any vessel, including vessels belonging to another port than that of the ventjager itself. So, how did the ventjagers operate, once they left the shores of Holland? Would they co-operate more with their next door neighbours, rather than with vessels from the other end of Holland? The process of selling herring can be traced through testimonies that every skipper of a ventjager, along with two other members of the crew, had to give to the local clerk of the *College van de Grote Visserij* upon arrival in Holland. For some of the towns in the *College*, records of these testimonies have survived, facilitating an assessment of the pattern of buying fish in open sea. Two years, 1680 and 1720,

²³ 'Articulen', NA, ACGV, inv. no. 686, p. 32.

²⁴ Akveld (1977) 324.

were chosen as samples to investigate *ventjagers* buying salted herring and landing them in Schiedam.

Selling herring to Schiedam ventjagers

The selected *ventjagers* bought herring at sea from skippers coming from all over the Holland province.²⁵ In 1680, three *ventjagers*, and in 1720, five *ventjagers*, supplied testimonies of their business in Schiedam. Each testimony included references to every acquisition of herring, noting the date, the amount of herring, the name of the skipper, and for most references also the hometown of the skipper. The skippers mostly came from towns that took part in the *College*, such as Enkhuizen or Schiedam, but other towns were also recorded as the skipper's hometown (see figure 2). In order to see if the *ventjagers* cooperated with any fishermen within the *College van de Grote Visserij*, the assumption is made that skippers coming from an area in the Noorderkwartier would be fishing out of Enkhuizen, and that skippers from the southern parts of the Holland province would be fishing out of one of the towns of the Zuiderkwartier. The skippers from Schiedam landed their catch in their hometown.

Figure 2 demonstrates how the *ventjagers* bought herring from fishermen from any part of Holland, which has a further implication. The *ventjagers* in question bought most of their herring on three to four specific dates, and during one day they would receive herring from a great number of skippers. Furthermore these skippers would come from anywhere in Holland. This suggests that co-operation and communication between fishermen was not limited within one town, but that fishermen of all areas were fishing within a short sailing distance of each other. The business of the *ventjagers* as well as the fishery itself thus does not seem to have actually excluded some areas in favour of others. But did the *ventjagers* buy fish more often from ships of their hometown, Schiedam, as opposed to more distant colleagues?

Figure 3 shows the origin of the 66 skippers identified as having handed over salted herring to a Schiedam *ventjager* in 1680. Divided into the three designated categories above, the percentage of skippers coming from one of the designated areas is compared with the relative standing of the same areas in terms of total annual landings of salted

²⁵ GA Schiedam, Gerechten van Schiedam, inv. no. 618 and 621.

Fig. 2. Hometown of skippers selling herring to Schiedam *ventjagers*.

1680		1720	
Hometown	no. Skippers	Hometown	no. Skippers
Schiedam	16	Schiedam	27
Rest of Zuiderkwartier			
Maassluis	2	Maassluis	4
Rotterdam	1	Rotterdam	12
Vlaardingen	7	Vlaardingen	16
Delfshaven	7	Delfshaven	5
Brielle	9		
Katwijk	2	Katwijk	1
Noordwijk	1	Noordwijk	3
Scheveningen	1		
Noorderkwartier			
Enkhuizen	8	Enkhuizen	2
Texel	3	Texel	1
Petten	1	Petten	1
Egmond	3	Marken	5
Broeckhuizen	1	De Rijk	1
Venhuizen	3		
Graft	1		
Unidentified	8	Unidentified	2
Total	74		80

herring. Figure 4 gives the same comparison for 78 skippers in the year of 1720.

The results show for 1680, as well as for 1720, that less than 15 percent of the Dutch production of salted herring was landed in Schiedam. In 1680, however, the Schiedam *ventjagers* bought herring from a Schiedam herring vessel once out of four times, and in 1720 every third purchase of herring stemmed from a Schiedam skipper. The other areas of the Zuiderkwartier also figured more heavily in the statistics of the *ventjagers*, whereas they had a representative share of the offshore acquisitions in 1720.

Interestingly though, the Noorderkwartier located far away from the Schiedam merchants operating the *ventjagers* did not appear as often in the landings as their share of the total production of herring might

Fig. 3. Origin of the 66 skippers selling herring to the three *ventjagers* landing in Schiedam, 1680. Divided into the three designated categories above, the percentage of skippers coming from one of the designated areas is compared with the relative standing of the same areas in terms of total annual landings of salted.

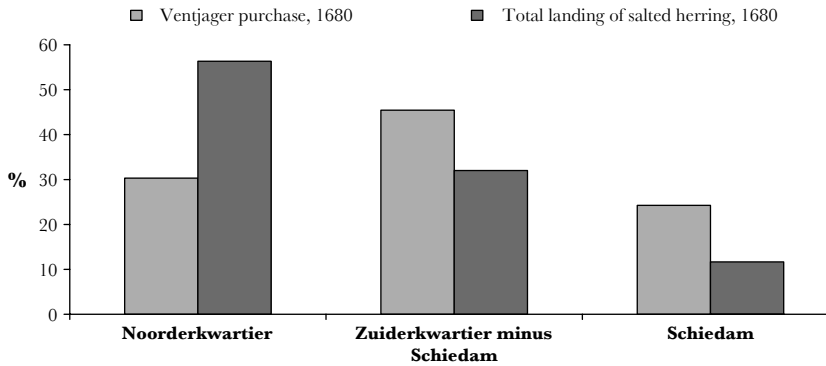
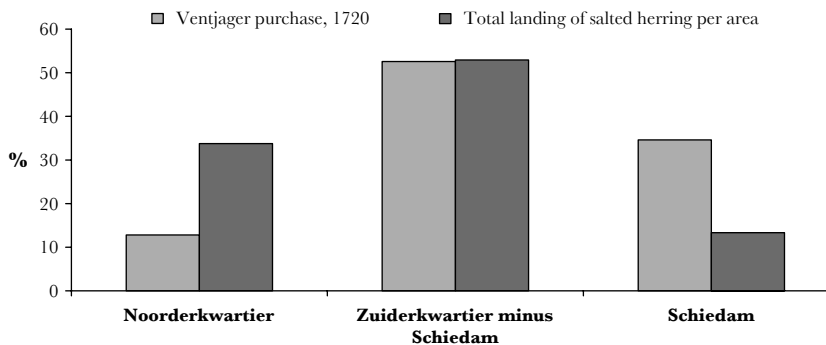


Fig. 4. Origin of 78 skippers selling herring to five *ventjagers* landing in Schiedam, 1720. Divided into the three designated categories above, the percentage of skippers coming from one of the designated areas is compared with the relative standing of the same areas in terms of total annual landings of salted herring.



suggest. In 1680, more than 56 percent of all salted herring in Holland was landed in Enkhuizen, but only three times out of every ten did the *ventjagers* from Schiedam buy herring from a skipper based in the Noorderkwartier.

The evidence suggests, therefore, that the business of the *ventjagers* was an important part of the cooperative nature of the Dutch North Sea herring fishery. By law, they operated as a joint venture between all participating towns in the *College van de Grote Visserij*, and in practice the *ventjagers* from Schiedam also facilitated fishermen from all over Holland. But, when looking at the composition of fishermen selling to the *ventjagers*, a distinct bias occurs favouring the local fishermen from Schiedam. There can be two rationalities behind this.

The main objective for the Schiedam merchant investing in a *ventjager* was to maximise the acquisition of herring as a *ventjager*, regardless of its provenance. The merchant was likely to have financial and social ties to the local ship-owners and the skippers of the herring industry, other than that of an offshore fish buyer. In Vlaardingen in the first half of the nineteenth century, the herring skippers seemed to change frequently between commanding a *ventjager* and one of the herring vessels.²⁶ One other possible reason for the apparent bias in favour of the Schiedam fishermen could be found in the fishing operation itself. Assuming that skippers from Schiedam and possibly the other towns in the Zuiderkwartier were fishing alongside each other, rather than randomly with skippers from all over Holland, then the *ventjagers* could easily primarily stay with their own townsmen, and buy fish from them.

Did the fishing operation offer opportunities for groups of fishermen, from Schiedam or another town, for instance, to form a club of their own within the larger group of the Dutch herring fishermen? In order to answer this question it is necessary to analyze the nature of the fishing operation itself at sea and the behaviour of fishermen. How did the fishermen assist or hinder each other at sea, and how did they control and exchange knowledge of the best fishing places?

Buying fish with De Jonge Hendrik Jacob

On a Tuesday morning, 16 June 1789, the crew aboard the *hoeker*, called *De jonge Hendrik Jacob*, lifted anchor in northern Holland, set

²⁶ NA, ACGV inv. no. 387–395 and 626–654.

sail and headed out of the Zuiderzee. The *hoeker* and the *buis* were the preferred types of vessels used in the Dutch offshore herring fisheries both for fishing and as *ventjagers*. The whereabouts of this particular *hoeker* is known because a diary of the voyage has survived, written by the captain of the ship, Jacob Zalmten.²⁷ The investor was the merchant Cornelis Jantjes from Enkhuizen, and the *hoeker* served as the second *ventjager* of the Noorderkwartier in the fishing season of 1789.

The diary was written in prose, providing an eyewitness account of life at sea. The *ventjager* left the Netherlands in the company of some 30 herring vessels, and on Friday, 19 June, the *De jonge Hendrik Jacob* reached the Shetland Islands and anchored in the Baai van Hitland, on the east coast of the main island near the town of Lerwick. This bay was the main meeting point of the Dutch fishing fleet, where they could rest, buy provisions on land and still be close to the summer fishing grounds.

In the following days more and more vessels arrived at the Baai van Hitland, and on Wednesday, 24 June, when the fisheries started, more than 130 Dutch herring vessels headed out to the fishing places, where they would set out their drift nets in the evening and pull them in again in the early morning. The crew of *De jonge Hendrik Jacob* was ready to receive herring on the morning of the 25 June, and 'waved at a few ships for catch but nothing had been caught as far as we could see there were no signs of catches.'²⁸

The next morning, the *De jonge Hendrik Jacob* was ready again to scout for signs of herring vessels, and to the northeast the crew saw another *ventjager* with eight to ten herring vessels drifting by, as if they were about to hand over herring. Later that day they caught sight of the first *ventjager* from Vlaardingen and a fleet of about sixty herring vessels was spotted sailing to the south-west.

On Sunday, when the fishermen were resting after not having put out their nets on Saturday night the *ventjagers* had time to communicate with the first *ventjager* of Enkhuizen, who spread the word that the first *ventjager* from Vlaardingen had already sailed back with a last of only thirteen barrels of salted herring.

On Monday morning the crew of *De jonge Hendrik Jacob* continued its search for freshly salted herring, but with little success. Using flags as

²⁷ 'De Jonge Hendrik Jacob', Scheepvaartsmuseum, Amsterdam, inv. no. 5 187.

²⁸ 'De Jonge Hendrik Jacob', 25 June 1789.

signals the crew communicated with several ships both from Vlaardingen, Maassluis and Enkhuizen, but only a few herring had been caught. The *De jonge Hendrik Jacob* stayed with a fleet of thirty to forty vessels and Friday morning they finally 'saw a few ships with the flag up, we spoke to the ships...' and eight different ships handed over a total of 15 ¼ barrels of herring.²⁹

On Monday night of the following week, the *De jonge Hendrik Jacob* was within sight of fourteen to fifteen ships setting out their nets. The following morning, twenty vessels were in the area, and one vessel handed over herring to the *De jonge Hendrik Jacob*. After a slow start, the crew was more successful the following week, becoming more prosperous, and the description in the diary of the second week is a further indication of the high level of communication taking place at sea. On Wednesday, eight vessels handed over a total of forty-four barrels of salted herring, and on Thursday one hundred and eleven barrels came aboard. The crew of the *De jonge Hendrik Jacob* first obtained the herring from eight different vessels. Later the same day they cruised around and suddenly to the north 'saw we a ship in front of us laying out its net, with its flag waving from the top and immediately we went there to hear what herring they had for us, and who the skipper was and we found it clearly to be Jacob van de Spek (with) 133 barrels of salted herring.'³⁰

On Friday, 10 July, *De jonge Hendrik Jacob* had collected a total of 214 barrels of salted packed herring, or the equivalent of fifteen lasts and four barrels, with which captain Jacob Zalmten and his crew must have been content. They started to move south, encountering about fifty herring vessels near Fair Isle in between the Shetlands and Orkney Islands. On Sunday, 12 July, they estimated their position to be 58 degrees and 25 minutes, which is off the Scottish coast, and three days later they reached the shallow waters of Doggersbank. The homebound journey seems to have been slowed down by still and bright summer days, but finally on the morning of 22 July they caught sight of Egmond aan Zee and later that day they managed to get inside the Zuiderzee area.

Judging from the testimonies of the above landings of herring by *ventjagers* as well as the regulations imposed by the *College van de Grote Visserij*, this journey of the *ventjager*, *De jonge Hendrik Jacob*, seems to

²⁹ 'De Jonge Hendrik Jacob', 3 July 1789.

³⁰ 'De Jonge Hendrik Jacob', 9 July 1789.

give a representative eyewitness account of the Dutch herring fishery in the first four weeks of the season. For every day spent at the herring fishing grounds, the diary contains information on fishing vessels appearing within eyesight of the *De jonge Hendrik Jacob*, and in the days of fishing they encountered as many as fifty vessels during one day. This was a substantial part of the 180 Dutch vessels active in the season of 1789.³¹

Fishermen were able to communicate with everybody within sight by way of flags raised to the top of the mast. In this way, the fishermen who had just caught a given amount of herring could sell it to the *ventjager*. In the process of learning that barrels of herring were obtainable from one boat in the area, all other fishermen in the area would acquire the same information. Knowledge of where the schools of herring were moving was a valuable economic asset, but in the context of the Dutch North Sea herring fishery, it seems to have been an asset shared rather freely among the skippers. If indeed it was the case that the individual skippers formed one large group or information-sharing club, one should expect that the temporality of catches was influenced by this. With regards to the business operation of buying herring in the open sea, there is reason to believe the information in the diary or journal of the *De jonge Hendrik Jacob* to be accurate. Bearing in mind that *De jonge Hendrik Jacob* was in the vicinity of so many vessels every day, it is striking that virtually all of the acquisitions of herring took place during the course of five days, 29 and 30 June, and from 7 to 9 July. This reveals that not just one or two vessels, but a large part of the group of herring vessels fishing near each other, had hit schools of herring at virtually the same time, which makes sense if they hunted together and engaged in an unlimited trade of information.

As with the business of the *ventjagers*, the fishermen also had to abide by regulations on fishing and communicating. Beside the above-mentioned general regulations on who was allowed to take part in the herring fisheries, the length of the season, what fishing gear to use and the quality of the fish, the *College van de Grote Visserij* also imposed a number of official codes of conduct, which the fishermen were obliged to follow when fishing. The most thorough regulatory measures stem from the 1580 body of laws.

³¹ Kranenburg (1946) 222.

What seems to have been a focal issue was not to get in the way of others, and 'everybody taking part in the herring fisheries should beware of keeping the rudder clear of nets drifting in the sea.'³² In fact, several articles explain how one should go about handling one's own nets, and the nets of others. Article 5 even stipulated that he who physically or otherwise harassed a fellow fisherman should be corporally punished, suggesting that problems of this nature could arise.³³

The laws also specified some means of communicating with each other. For instance, when a ship arrived at its destination and the weather was suitable, the skippers were to place a signal at *aft*, the back end of the ship indicating that they were ready to fish. When the sun set and the time was right for fishing, the skippers raised the anchor and commenced fishing. Skippers who did not take part in the actual fishing but harassed the other fishermen by their presence would be penalized. No sitting on the fence was tolerated. If anyone had encountered bad weather, he was to set up a light at the *bow*. When he was raising the anchor again, about to set out the nets, he should then set up a second light in the front of the ship. Furthermore, he was not to turn out the second light before the anchor had reached the ground again.³⁴ The renewed laws from 1801 were less detailed on the topic of behaviour at sea, but the main issues of keeping clear of other fishermen's nets and signalling with lights when fishing were still upheld.³⁵ A further renewal in 1820 specified that the skippers were obliged to put up a flag when herring was caught.³⁶

To the extent that the above regulations were observed, the putting up of lights to signal when one was fishing would communicate to any neighbouring fishermen that fishing was going on. The rules of conduct imposed by the *College van de Grote Visserij* seem primarily to have played the role of avoiding trouble at sea. So, what happened during the everyday practice of fishing? How did good and bad news of the fishing spread? In the period of almost three centuries ending around 1860, tens of thousands of fishermen worked aboard the herring vessels, yet only a few accounts of the fishing operation were written down. A few

³² Cau (1658) vol. 1, 684. art. 1.

³³ Cau (1658) vol. 1, 684. art. 5.

³⁴ Cau (1658) vol. 1, 684. art. 2–4.

³⁵ 'Articulen', NA, ACGV inv. no. 686, 19–20.

³⁶ Assenberg (2001) 15.

surviving diaries and logbooks offer the chance to analyze the fisheries from the viewpoint of fishermen while they were at sea.

One such example comes from an important entrepreneurial family in the Vlaardingen herring industry, the Kikkert family. In 1848 Hendrik Kikkert, a ship-owner, had equipped five vessels for the herring fishery. Aboard one of the fishing vessels, the *hoeker* named *De Toekomst*, Hendrik Kikkert's son Cornelis wrote a diary of events that took place during a journey lasting from 3 to 30 June.³⁷ From this diary, we learn that in 1846 the starting date of the season was moved forward two weeks to 10 June, since reports from Scotland had already mentioned good fishing from early June.³⁸ The skipper of *De Toekomst*, Hermanus Schouten, and his crew took advantage of the extra time, and began their voyage on 3 June. Just before noon on 7 June they caught sight of the Shetlands. In the afternoon they arrived in the Baai van Hitland, where they found a large number of vessels. In the next few days, the crew of *De Toekomst* visited other vessels, and received visits from skippers in Hendrik Kikkert's fleet, as well as from other skippers from Vlaardingen.

In the following week *De Toekomst* fished in the area south of the Shetlands and communicated frequently with other vessels, both Kikkert's vessels and others. For instance, on 12th June *De Toekomst* appears to have been communicating with five other vessels, and exchanged information on how much each had caught. Two of the skippers with whom contact was made were Leendert Schouten and Cornelis Storm, who also fished for Kikkert, but *De Toekomst* also approached skippers from Vlaardingen and one from Amsterdam. It appears, therefore, that *De Toekomst* shared information with a number of vessels, not just the ones with which it was associated. But compared to the fishing fleet as a whole, how representative was the behaviour noted in this journal kept by Cornelis Kikkert?

The crew of *De Toekomst* and Cornelis Kikkert were part of an unusual fishing trip. Already on 25 June they stopped fishing and announced their journey home to two other vessels. In the afternoon they set sail to head back, brought some letters with them, and after what seemed a smooth journey without any references to meeting other vessels on

³⁷ Borsboom (1992) 42–52.

³⁸ Beaujon (1885) 263.

their way, they set foot on the quay in Vlaardingen on 30 June.³⁹ The short journey would in itself indicate that *De Toekomst* functioned as a *ventjager*, but this was not the case. The vessel was not on the approved list of *ventjagers* for the Zuiderkwartier, and there are no indications in the diary of Cornelis Kikkert that *De Toekomst* bought any barrels of herring. Instead, the crew was fishing like the other herring vessels, and on the same scale. On 22 June, for instance, the crew set out '46 netten', which is the equivalent of a full set of driftnets with a total length of about 1.4 km.

Some of the information from Cornelius' diary, however, can in fact be checked by way of logbooks from two other vessels fishing at the same time. The ship owner Jan Boon Jr., from De Rijk near Enkhuizen, had equipped the *buis*, *Het Bruine Paard*, for the herring fisheries, with Klaas Moeneswerf as skipper.⁴⁰ Coming from Vlaardingen, the *hoeker*, *Willem Beukelszoon*, was also at the fishing grounds off the Shetland Islands with Klaas Schep as skipper.⁴¹ The information in these two logbooks was written in preformatted tables, giving a high degree of uniformity, but not lending as much space for miscellaneous information as in Cornelis Kikkert's diary. Still, we can see that on Saturday night, 10 June, *De Toekomst*, *Willem Beukelszoon*, and *Het Bruine Paard* all set out their nets for the first time, off the Baai van Hitland. From *Willem Beukelszoon's* point of view, at least 100 vessels set out to fish on this night. This is surprising since normally the Dutch fishermen did not set out their nets on Saturday night in order to rest on Sundays. However, for the other Sundays, the 3, 17, and 24 June, there is nothing written in the logbook of *De Toekomst*, but presumably they rested, since the two other logbooks reveal that no nets were set out.

On 13th and 14th June *De Toekomst* did not fish. Kikkert wrote in his diary that 'stortregen', torrential rain, poured down on both days. On 15 June *De Toekomst* consulted Leendert and Willem Schouten who both said that no-one had caught very much so far, and that they had not fished at all for the previous two nights. The same goes for *Het Bruine Paard* and *Willem Beukelszoon*, judging from their logbooks, and rain is also mentioned in the journal of Willem Beukelszoon. *De Toekomst* was in between the Shetlands and the Orkneys near the Fair Isle, while

³⁹ Borsboom (1992) 50–52.

⁴⁰ 'Journaal van stuurman', Museum In 't Houten Huis, De Rijk, inv. no. 03537.

⁴¹ 'Willem Beukelszoon', NA, ACGV inv. nr. 682.

the two other vessels were north of the Shetlands. The weather situation, however, seems to have affected fisheries in both places.⁴²

In the following days *De Toekomst* traveled north again, and on the morning of 20 June the crew communicated with a Klaas Schep. He, in turn, told the men aboard *De Toekomst* that he had 'caught 2 barrels of herring in total and yesterday a few herring'.⁴³ Since Klaas Schep was the skipper of *Willem Beukelszoon*, his communication with Kikkert can be checked. In the logbook from *Willem Beukelszoon*, the tables reveal that two barrels of 'maatjes haring', herring not yet ripe, were caught on 20 June, and on the same day, at nine in the evening, both barrels were sold to the fourth *ventjager*. Another note in the logbook showed that the two barrels were caught on the latitude of 61 degrees north, which also corresponds with the information given in Cornelis Kikkert's diary.⁴⁴ Around noon on 20 June, shortly after speaking to the fortunate Klaas Schep, Kikkert wrote that they were on the 61 parallel.

Judging from the logbook, the two barrels that Klaas Schep handed over to the *ventjager* represented the first good catch he and his crew had made in that year's fishing season. When Klaas Schep told the crew aboard *De Toekomst* that he had only caught a few herring the night before, he was surely downplaying the size of his success the previous night. The personal relationship between Klaas Schep and the skipper Hermanus Schouten is not known, but it seems that in this case he was not telling the whole truth. During interviews with Danish fishermen in the 1980s the Danish social anthropologist Torben A. Vestergaard paid attention to how the creation of a special language amongst the group of fishermen was a way for them to keep information secret from the ones who were not trusted.⁴⁵ One possible explanation is that the notion of catching 'a few herring' was merely an understated tone used when Dutch herring fishermen spoke to each other at sea.

So, what seems to be a lie, since the 2 barrels were not aboard his ship 24 hours earlier, might have been acceptable information and even reasonably easy to decode for Hermanus Schouten, Cornelis Kikkert, and the rest of the crew of *De Toekomst*.

⁴² Borsboom (1992) 46–48.

⁴³ Borsboom (1992) 48.

⁴⁴ 'Willem Beukelszoon', NA, ACGV inv. nr. 682.

⁴⁵ Vestergaard (1989).

How do the experiences of the skippers fishing in the summer of 1848 fit into the larger picture of information sharing in the limited entry Dutch North Sea herring fisheries?

Communication and cooperation

The above-noted analysis of fishing strategies in the Dutch North Sea herring fishery serves to demonstrate the degree to which this historical fishery operated and conformed to modern theories on information sharing in limited entry fisheries. The fishermen of the *College van de Grote Visserij* were fishing far away from home targeting a migratory species such as North Sea herring. To the extent that they would fish in accordance with modern resource theory they could expect to catch more and reap a larger profit the more they co-operated with each other when fishing.

Fisheries managers today are becoming increasingly aware of the role of fishermen's knowledge and information sharing as a valuable source of knowledge. By the nature of their work, it is difficult to acquire such knowledge for fisheries managers, partly since this information is a potentially valuable professional asset.⁴⁶ Since it is difficult to undertake such an investigation on modern fisheries, does it make sense to undertake such an investigation on a long-gone, low-tech fishery, using archival material as the primary data?

When looking at the institutional set-up, the *College van de Grote Visserij* facilitated a limited entry fishery, and the concept of *ventjagers* certainly favoured co-operation amongst the Dutch fishermen operating within this framework. They co-operated not just within their own town or area, but also with fishermen from the rest of the Holland province. The analysis of the practice of the *ventjagers*, however, adds complexity to this notion. The *ventjagers* bought herring from all over the country, but they were more likely to buy fish from their neighbouring fishermen.

The journal of the *hoeker* the *De jonge Hendrik Jacob* illustrates how a *ventjager* was very much aware of the successes of different herring vessels fishing within its proximity. The fishermen had to communicate to the *ventjager*, by signalling with flags, lights or simply shouting, in

⁴⁶ Maurstad (2002) 159–166.

order to announce that they had caught herring and were ready to sell it at high sea. This made it difficult to hide information on good patches of herring between fishermen within eyesight of each other. Still, if *coarse grained* knowledge on where to fish was easily distributed, certainly not all *fine grained* knowledge was shared unfiltered. Three different accounts from fishermen fishing off Shetland in the summer of 1848 all provide ample information on different fishermen's success or lack thereof. The meeting between the two *hoekers*, *De Toekomst* and *Willem Beukelszoon*, on 20 June reveals that the information could be shared in a coded way or distorted, and some even withheld.

In the view of modern anthropological studies on information sharing amongst fishermen, this is not surprising. In the 1960s autumn fishery for herring off the Swedish west coast, the local fishermen were challenged in much the same way as the Dutch herring fishermen fishing in the North Sea in previous centuries. Valuable information was scarce in the search for fast moving herring schools but it was aided by radio communication, whereby the Swedish fishermen could coordinate their search. As one fisherman was quoted saying 'When anybody's radio suddenly becomes silent, that's a sign as good as any that he has come across herring.'⁴⁷ Nonetheless, in the Dutch North Sea herring fishery valuable information seems to have been shared. Testimonies from the *ventjagers* as well as the ordinary herring vessels indicate that the successful days of fishing often came in clusters, where many vessels in the same area would enjoy good catches during the same couple of days.

Conclusion

In conclusion, this study has applied economic resource theory and the results of anthropological case studies on modern fisheries in order to discuss information sharing in a historical context with a distinct institutional, technological, and cultural set-up. Whatever the finer limits were for information sharing in the Dutch North Sea herring fishery from c. 1600 to 1850, fishermen co-operated in managing the organisation of the fishery, as well as in the actual fishing operation far away from the shores of Holland. This is the first study based on archival studies of such a complete fishing organisation this far back in time. It

⁴⁷ Löfgren (1972) 88.

is not known whether other open-sea pre-modern fisheries, for instance in North America, had a similar degree of organisation.

This study highlights a highly sophisticated historical fishery, where the fishermen acted as much more than simple predators chasing their prey. Instead, if the analogy of predator-prey is adopted, the Dutch fishermen operated more like killer whales or piranhas, realising their mutual interests in hunting together in large groups. Formal and informal systems of sharing information and monopolising the benefits of the very valuable first catches of the season reveal a fishery with strong co-operative incentives, as a way to optimize catch rates. The modern economic concept of forming clubs of information sharing was, at least in practice, already realized in the Dutch herring fishery of the early modern era.

Three different accounts from fishermen fishing off Shetland in the summer of 1848 indicate that valuable information seems to have been shared among groups of Dutch fishermen. They also revealed that the whole truth was not always told, and some information held back. Similar to the behaviour of many modern herring fisheries, the Dutch fishermen hunted together, which is likely to have helped to optimize their gain. If any club members or free-riding fishermen violated the practices established, social as well as legal controls defended the interest of the club.

When looking at the institutional set-up, the *College van de Grote Visserij* facilitated a limited entry fishery, and the regulations concerning the *ventjagers* certainly favoured co-operation amongst the Dutch fishermen operating within this framework. They co-operated not just within their own town or area, but also with fishermen from the rest of the Holland provinces. The analysis of the practice of the *ventjagers* demonstrates how the *ventjagers* bought herring from all over the country. They were more likely to buy fish from their neighbouring fishermen, though, than from fishermen coming from the other end of Holland. This made it difficult to hide information on good patches of herring between fishermen fishing within eyesight of each other. Thus, even if one wanted to hide the information from other fishermen, this was not possible, if at the same time they wanted to attract *ventjagers* to sell their catch to at open sea.

The Dutch herring fishery was for centuries the largest fishery in Europe and the envy of foreign nations. During the first half of the seventeenth century, 700 to 800 herring vessels went out fishing every

season; following various periods of decline and stability in the overall fishing effort, a mere 150 vessels sailed out in the first half of the nineteenth century, but still the fishing operation was conducted more or less unchanged for a period of more than 250 years. One of the Dutch business secrets might have been their extensive use of information sharing and co-operation. As previously shown by Wilson and Johnson, fishermen hunting together drastically reduce their cost of searching.

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